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Medicine & Surgery

NOTES

Taken from Lectures

-of-

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Sec. 1. Oct. 6 - 98. Dr. L. Teskey.

Medicine and surgery defined.

Surgery, the more mechanical branch of the healing art. The seat of disease is laid open and so directly affected.

Pathology is a loss of harmony in the body. If one organ lose its equilibrium, the whole body loses its equilibrium. A sympathetic disease. ~~It~~ Nature if left alone is capable of overcoming the great majority of diseases. Good fresh air, rest (perhaps) plenty of water to drink and good wholesome food in just sufficient quantity will cure with better satisfaction the majority of diseases.

Causes of disease are numerous, It may be from the germ which has found a good ~~or~~ favorable medium for its growth in the body. Some diseases are congenital (born with the being) Others again, are the result of mechanical injury.

Inflammation is the most prevelent disease. It is the result of irritation, brought about by foreign bodies or congenital. Disease in almost, if not all its forms, is manifest in some degree of Inflammation. 16

Sec. 2. Oct. 10-98. —

Inflammation is associated with most diseases. It may be studied in living tissue under microscope. Mesentery or web of frog's foot is usually used. In this way all the changes can be observed.

Changes which takes place. 1. In blood vessels. 2. Outside the blood vessels.

Inflammation may proceed from without inward or from within outward, according to where the irritant is. If germs etc in the blood, then it is from within outward - These inside & outside changes go on almost together. Inflam. process may commence without blood vessels.

Blood vessels are not necessary to Inflammation. But they are invariably associated and take a very active part in it too.

We will consider Inflam. from within out. 1. The blood vessel.

1. A slowing of the current in the affected vessel or vessels. This may go on till circulation stops — stasis — according to the degree of inflam. And we have all degree of flowing of blood, stasis at centre of Inflam. ~~area~~, the flow increasing to normal surrounding the inflammed area. stasis is not necessary to inflam. The normal consistency of the blood current has become changed. The normal is as follows:—

1. centre or core - red blood corps. 2. Next the white blood corps
3. liquor sanguinis or plasma which is against the vessel wall

In process of Inflam, these elements change. The core no longer consists of Red corps, but the different elements are mixed throughout the whole stream, from core to vessel wall. The Red & white corps. find their way and are attracted to the vessel wall, which becomes dilated and softened. The consistency of the blood does not change. But its physiological relations change. (Mixture) Corps. may stand at wall for a while and then move on. When the current becomes very slow, the corps form button-like projects on outside of dilated and softened vessel. Soon the corpuscles (white first) pass right through the vessel wall into the fixed tissue - The white first by amoeboid movement. Then the red corps and plasma when vessel wall is less resisting. This passing of constituents of blood through the vessel wall is called - "diapedesis". The capillary wall becomes dilated, so that a vessel that normally contains only one layer of corps may contain two or three. So the wall is dilated and necessarily thinner vessel being stretched to twice its normal size and becomes softer too so that the corps. readily pass through and some plasma too.

MEDICINE AND SURGERY.

SURGERY is that branch of the healing art which is more mecanical than medical in its nature.

PATHOLOGY is the study of the phenomena which accompanies disease.

INFLAMMATION is a pathological condition which is attended with heat, pain, redness, swelling and partial or complete loss of function. All these are not always present. The heat is local and to some extent general. The swelling takes place if the tissues will permit, and if the structure is vascular there is always more or less redness.

CAUSES.

These are divided into Constitutional and Local or Predisposing and Exciting. Constitutional causes are such as act through the system (poisons, &c.). Local causes are such as act immediately upon the tissues (mechanical violence).

PREDISPOSING CAUSES are such as render the tissues more liable to take on diseased action.

EXCITING CAUSES are those which act directly upon the tissues and cause them to become inflamed.

ALL PREDISPOSING CAUSES act by lowering the vitality either locally or generally. They are:--

1. Poisons of any kind (impure air).
2. Undue exposure to climatic changes.
3. Over-exertion.
4. Poisons acting constitutionally, such as syphilis and tuberculosis.
5. Poisons acting chemically.(Opium).
6. Previous inflammatory action.

EXCITING CAUSES also act by lowering vitality. They are:--

1. Mechanical violence (fractures).
2. Chemical action (caustics).
3. Extreme heat or cold).
4. Many poisons (snake bites).
5. Causes which interfere with nutrition (ulcers).

PREDISPOSING EXCITING CAUSES act together. For instance, the pulp of a tooth may be predisposed to inflammation, the patient becomes chilled, and as inflammation always attacks the weakest part, a few hours later the patient has a violent tooth-ache, the chill acting as the exciting cause. In inflammation the following changes take place in the tissues. Since in all inflammatory processes in their nature the intercellular substance softens and liquifies, thereby liberating the cells which seems to have a tendency to return to their original embryonal form. If they are stellate or elongated they become more spherical. This process may continue until the cells are broken down and the fluid material either reabsorbed or expelled from the system. This, of course, constitutes the destruction of a portion of tissue. This is always the case if the irritation continues long. If, however, the cause be early removed the tissues may be built up again. Sometimes the cells increase in number by multiplication; but this can take place only when the irritant has been removed and there is a tendency to reconstruction. The vascular and nervous systems take a secondary part only in the process. The nervous system becomes more irritable so that the nerve fibres carry impressions from the periphery more readily than before to the centre. It also, by inhibiting the muscles of the smaller blood vessels, causes them to dilate.

CHANGES IN THE BLOOD.

As soon as the inflammatory action is set up the small vessels and the capillaries become dilated and at the same time the rapidity of the blood current is decreased. This is due to the increased friction, the walls becoming softened and more adhesive and the corpuscles clinging to them. Sometimes the blood stagnates and if this condition continues the part dies from starvation. Normally the red blood cells occupy the centre of the stream with white corpuscles on each side of them and a quantity of fluid on the sides. In inflammation the cells are found throughout the whole stream, the white and some of the red clinging to the walls. Some of these white cells by a process known as "DIAPEDISIS" even pass through the walls of the vessel into the surrounding tissues and may be followed by the red cells. Their passage is facilitated by the thinning of the walls caused by their enlargement. These cells and the plasma which finds its way out through the walls of the vessel, cause the swelling.

If the area of inflammation be very extensive some slight change may be noticed in the general blood current. These are due chiefly no doubt to the increased debris which they carry. The softened intercellular matter, liberated cells, plasma and corpuscles from the blood vessels and possibly a few additional cells due to multiplication when taken together constitute the Inflammatory Products.

This passing through is not the result of increased tension as tension is at a minimum or at zero. at stasis. The corpuscle stick into the wall and finally pass through. A great No. of white, the red are fewer, but in more evidence in a higher degree of inflam. As the vessel wall dilates it becomes softer. Blood pressure is at a minimum. There is no tension where the greatest degree of dilatation is found. & vice versa in inflam.

In the normal vessel, the larger it is the greater the tension. Dilatation increases the blood current - greater tension. But in inflam. it is the opposite. The larger the vessel is dilated the slower the blood flows. The blood is allright, no change there, for when past that area it runs fast as ever. But it is the vessel wall that causes the slowing. It becomes abnormal and attracts the blood, so resisting the flow. Blood adhers to vessel wall on account of a change in that wall, a thinning and softening of the wall. Adhesiveness attracts the corps and being softer (wall) and thinner corps pass through.

Tissue outside the vessel - Fixed tissues, connective tissue, lymphatic radicals. Fibrous tissue begins to disapper, the fibres break down, liquify the corpuscles become free. tissue liquifies, the cells floating in the fluid they become (cells) more spherical. - covered with lymph (?) We have also the lymph fluid, and the corps and Liquor Sanguinis from the blood vessel. (Espec. white corp.) These forming a fluid. which is called the inflam. products, which have accumulated from fixed tissue in sympathy with pathological condition of blood vessel and the elements of blood which enters the fixed tissues.

These products go on accumulating and we have enlarging, tumescence circulation in blood vessels and circulation in lymphatic vessels equally important, the latter, secondary it is true to the Blood Circ. in many ways. These lymph radicals carry away waste products. In the process of Inflam. the lymph radicals become dilated and softened too and stasis results, the vessels are clogged up. Some of inflam. products are carried by lymph vessels to glands here the poisons cause enlargement of glands. But very little can be carried away while the process of Inflam. progresses, as vessels are clogged. So we have accumulation of products & tumesence.

The inflam. products increase as long as inflam. process lasts. and spreads over larger area too. Blood current is very active around the area of inflam. Just outside we find the current a little more rapid than normal. Some vessels being closed by inflam. process And the same amt. of blood coming to the part the remaining vessels are gorged as tension is higher. as they have to take all the blood, which the vessels in inflam. area took before. So blood runs faster in these vessels. If the source of nourishment is too far from centre of inflamed area the cells die. This then is an area of death.

Lec 3. Oct 27-98. - Inflam is a diseased condition and is a destructive process excess of process cause more death. Inflam tends toward death, but there is a limit. The poisonous affect of products may increase the inflam. The waste product of vegetable spores is very destructive. Microbes live on cell in which they are, finally overcoming the cell, killing it. The poison is the waste product so tendency is toward death. The most poisonous are the pyogenic Bacteria. They kill and poison the pus

Pus ~~death~~ is an inflam. product. May be chemical unions or actions which cause death of tissues and so pus may be formed [illegible]. As Croton oil, As, or C_5H_6OH. Latter unites with tissue in destroying it. Others are powerful irritants. Chemical affinity and vital affinity are opposite, both cannot exist together. One will be destroyed. Pus has not necessarily microbes in it Nor are they necessary to form pus. But they may be an irritant which causes an Inflam. process. Inflam. products may disappear & part be well again without any Suppuration. This is by Resolution. The Inflam. process, reach

its maximum, then the products are carried away by lymph radicals.
The irritant not remaining, being a blow etc. White corps. become granular
some break up. Red corps do the same. Haematin of red corp may come
to surface and leave a yellow mark, showing that Red corps. have been
broken up. These Inflam. products are carried away to lymph gland
after Inflam. process has ceased. Poisonous products will be held
in lymphatic gland, But may be so diluted that has no longer and
affect and no longer therefore an irritant. The gland is a filter. Poison
is held here and so not allowed to enter the circulation. The gland
may be inflam. or even suppurate. Poison irritating the gland.
Carbon lodged in tissue may be found some time after in the gland
Lymph glands act as filters, absorbing any irritating materials &
so preventing it from entering the circulation. So the lymphatics
reabsorb the inflam. products. Vessels return to normal circulation
slowly as area will likely remain congested, new tissue forming,
and this tissue may be colored for some time. Evidence of more blood.
Fixed tissue cells become broken down in Inflam. process and new
ones are formed by multiplication of those left. Multiplication is
after Inflam. process has ceased to exist. Like tissue forms like
tissue. This is the process of resolution. Each tissue forms its own
new tissue by multiplication of its own cells. It is not the action
of the white corp. If inflam is very acute and extensive, a
virulent poison being the irritant. Stasis is brought about in the
large area rapidly. Tissues die 1. From lack of nourishment.
2. From direct action of the ^irritants poison, it being virulent. Death of
fixed tissue in this case is called Gangrene. The virulent
poison will assist in the killing process, so the two causes
for Gangrene. Lack of nourishment & the above. So we have
gangrene after same manner as other. An inflam. process.
But this is a rapid death of fixed tissue. The other is death of
Inflam. products (8A) One of the results of Inflam is
Organization. May find after resolution a lump or hard
portion of tissue, an accumulation of organized tissue.
If a grain of shot be in tissue. There will be an accumulation
of Inflam products around it. — May form the centre of an abcess.
But may not cause enough Inflam to cause suppuration.
Accumulation may cease and as inflam. condition can only go
a certain distance, Irritant being small and not virulent.
around Inflam. area have very resistant fixed tissue cells:
and so outside there is no irritation and so resolution starts
What inflam. products do accumulate are as rapidly carried away.
by lymph radicals, so the effect of irritant is overcome before
there is any resolution.

Lec 4. Nov 17–98, 12.30 AM
Causes of Inflammations. Predisposing and general.
Predisposing are constitutional. If the vitality is
lowered from any cause this is a predisposition.
Due generally to inoculation of various forms of germs
Nature resists these, But germs may overcome. Resistance
may be handicapped. Strumous diathesis (Scrofulous)

PROOFS THAT THE BLOOD CORPUSCLES PASS THROUGH THE WALLS.

1. They have been seen to do so in the messentery of a frog.
2. By the injection of insoluble coloring matter (Cinnibar) into the blood, which, being taken up by the corpuscles, may soon after be seen in the corpuscles of the area outside of the blood vessels.

Redness in flammation is caused by increased amount of blood.
Heat is due to (1) The increased vital changes.
(2) The increased amount of heat caused by increased blood flow.
Pain is due to pressure on the nerve fibres.
Swelling is due to the effusion of inflammatory products.

1. By SUPPURATION inflammation may terminate.
2. By RESOLUTION.

The first implies death and expulsion;
The second, reorganization.

Death may result from:--

1. The direct action of the irritant.
2. From starvation.

In suppuration, owing to the continued presence of the irritant, the area of inflammatory products constantly increases, and the circulation, having been cut off from stasis, the central cells die from want of nourishment. Once they become foreign bodies they themselves act as irritants and are known as PUS. This pus is expelled from the body and carries with it the irritant at its centre. Pus is composed of debris of tissue, blood-cells, liberated tissue cells; all, of course, dead.

In the termination of inflammation by Resolution the blood cells are broken up and carried off into the general circulation by the veins and lymphatics. The fluids are absorbed by the lymphatics and disappear. The tissue cells, which have become embryonal, multiply and throw out intercellular substance and the tissue is reformed. This reorganization is effected by means of loops thrown out from the capillaries. These loops throw out other loops and thus the newly formed tussue is nourished and become vascularized. Other forms of termination, such as mortification or induration, are sometimes mentioned, but all these belong to one or the other of these two classes, and are by no means distinct varieties.

INFLAMMATION MAY BE SPREAD BY:--

1. Continuity of Tissue. As when the tongue is inflamed on account of a disordered stommach.
2. Contiguity of Tissue. As when inflammation of the tongue causes inflammation of the gum next to it or vice versa.
3. Metastasts, or jumping from place to place, as in mumps.
4. Sympathy, as when an injury of one eye causes inflammation in the other.

SPORES are not essential to the formation of Pus, as many suppose. This is proved:-

1. By the fact that a mangled hand placed in a bath of Disinfectant fluid, where spores cannot exist will yet suppurate.
2. Abscesses of the brain may form in healthy children as the result of an accident where no spores could be reasonably expected to be found.

ACUTE INFLAMMATION is an inflammatory process which runs an active course and terminates rapidly. Acute has reference to buth duration and intensity.

CHRONIC INFLAMMATION is inflammatory action extending over a long time but never acute.

SUBACUTE INFLAMMATION is a slight inflammation without reference to duration

AN ABSCESS is a localized collection of pus within a cavity. It may be either ACUTE or CHRONIC.

ACUTE ABSCESS is the result of acute inflammation.

CHRONIC ABSCESS is the result of chronic inflammation.

PUS is composed of fluid, debris of tissue, and corpuscles resembling white blood corpuscles and having nuclei.

HEALTHY OR LAUDABLE PUS is that which is discharged from wounds or ulcers in a healing state.

Pus is always surrounded by a zone of inflammatory products, sometimes called the PYOGENIC (pus-producing) MEMBRANE. It is not a true membrane, however, a good example being the abscess clinging to the root of a tooth when extracted.

GENERAL TREATMENT.

1. Remove the cause, if possible, which may be done mechanically; or, as in the case of Malaria, may be done medicinally.
2. Give local or general treatment. This may have for its object:-
   - (a) To lessen the amount of Inflammatory products.
   - (b) To maintain the vitality of the effused material.
   - (c) To favor its reabsorption.

While the materials are being effused, or during the early stages, apply COLD, which acts by constricting the vessles and thus lessening the effusion. Pressure has a similar effect. The general treatment at this stage is directly upon the blood pressure, which may be lessened by remedies such as Epsom Salts, which extract fluids from the blood, or Tartar Emetic and Ipecachuana, which act upon the heart and lessen the force and frequency of its action. Diffusible Stimulants, such as Opium, Ether and Alcohol or Heat, by enlarging the capillaries lessen blood pressure. After the infl. products have been poured out, the heat has for its object the maintenance of their vitality and their reabsorption. At

now called tuberculosis. Syphilitic inoculation which travels through several generations is a marked predispos. cause. Exhaustion, starvation, & poisonings are predispose to inflam. lesions. Same is true of different constitutional poisonings, as malarial blood, Arsenic, phosphorus. Struma – peculiar hereditary conditions, vitality and texture of tissue weak, so much given to suppuration and so predisp. to Inflam. It is not the inoculated germs from the parent, but a general weakness. May never be inoculated, unless exposed to various unhealthful conditions. Higher elevations are best for these people – North West – Climatic ~~co~~ conditions influence greatly. So struma is a predisposition, a peculiar kind of tissue and vitality. It is exceedingly difficult to single out these types. Two types said to be most disposed are blondes and very dark – Extremes – But all are subject to struma. Can never distinguish Tuberculosis or strumous diathesis.
Eczema etc are forms of struma. Get the family history to know definitely. Scraggy imperfect enamel of 6 yr. molar may be index of struma. This condition in tooth may be due to Exanthematous diseases, but struma may predispose to this – can't tell. These people may continue strong and live to advanced age

H. Syphilis is a slow fever, the forming of tissue counteracts the waste to such an extent that the patient may live apparently free from it for years. People subject to malaria are more liable to degenerate into tuberculosis. Immediate or determining causes of Inflammation Irritants of various kinds. The germ may exist local for a time – Tuberculosis, finally it is circulated throughout the whole body.
Inflam. may be due to local or general inoculation of various germs.
Around the point of inoculation the Inflam. products are thrown out Germ may be destroyed by resistance of body, but germ may be strong and body predisposed and so Inflam process proceeds. We immunize against certain diseases by vaccination in case of small pox. Disease may have passed and having had it we are otimmunized against that disease Have fever or measels etc not likely to have them again – otimmunized. Bullet may remain in body for years and give no trouble on account of capsulation and so inflam. is immunized. and bullet no longer an irritant. As soon as any tissue is dead it is a foreign body, an irritant There are irritants which cause inflam. and yet no chemical combination – poisons – Bee or serpent – These act as intoxicants. very acute inflam. In case of Arsenic and croton oil there is no germ present have have the inflam process just the same

Lec 5. Nov 21-98.

Application of cold after products have been thrown out so that they are not reabsorbed. Don't keep cold applied more than 24 hrs.
The application of heat is much more useful; for purpose of increasing vascularity of inflamed area, and hastens reabsorbtion of inflam. products, also tends to preserve the vitality of the products, and so prevents suppuration or sloughing Poultice applied to prevent suppuration. When heat can no longer prevent suppuration it lessens it. Little difference how it is applied – Hot fomentation If get a bruise – skin unbroken – apply cold first then in couple of hours apply heat. Hot water and Sponge. Heat facilitates the circulation, Dilating the vessels and lymphatics. To take down swelling use heat. Hot water or Linseed, Bran or Borassic poultice. Repeat poultice every three or four hours. Borassic poultice is used more now. It is antiseptic & non irritating. It is made by taking five or six layers of lint, large enough to cover the area. 5 grains Borac acid to 1 oz ~~hot~~ water. Moisten lint with this hot solution put oil gause – oiled silk – over it to cover ½ inch on all sides, then bandage. Heat lessens the tendency of death of inflam. product
Counter Irritants, another form of application of heat. cupping – blood sucked into the area by Dry cupping. Moist cupping – blood sucked from the area. Antiphlogistic treatment is invaluable. (cold – bloodletting etc and is little used now. In inflam process it is wrong to give remedies to lessen the activity of the heart, that aids instead of checking the process, a lowered tension in area is result. We want increase of circulation. (apparent U!) contraindicated. Internal medication is not indicated for local inflam, but for

general inflam. it is required. That is where virus is being absorbed. This gen. inflam. lessens the blood pressure, so stimulants are indicated. Blood letting is abandoned, locally and generally in connection with inflam. process.

Mechanical Injuries – Wounds and Contusions.

1. Contusion is mechanical injury to integument unbroken – a bruise – As soon as integument is broken it is a wound. Blood difuses in the inflamed area of Contusion, and causes discoloration, Ecchymosis. First a dark purple color then greenish, then yellowish to healthy. The dark purple is due to stagnation of blood in the area. Then the corps break down and Haematin stains the surrounding tyssues, to a reddish purple, then greenish yellow, then yellow, then normal.

Wounds. Mechanical injury brought about suddenly causing dissolution of Integument.

1. Incised. 2 Punctured, 3 Lacerated, 4 Penetrating, 5 poisoned Wounds.

1. Incised, – By sharp cutting instrument, straight & abrupt edges, gaping, bleeds freely.
2. Punctured, – The depth is greater than superficial area – By needle or sword, no gaping no hem, orrhage
3. Lacerated – torn, ragged – saw cut. Irregularity of wounded surface, little tendency to hemorrhage
4. Penetrating wounds – entering any of great cavities of body, as abdomen etc
5. Poisoned may include any of above plus poison.

this stage the application of heat is very beneficial.

1. Because it preserves the vitality of the infl. products.
2. Because it dilates the vessels and facilitates absorption
3. Because it lessens the amount of Pus.
4. Because it relieves the tissue from supplying animal heat
5. Because it hastens in abscesses the development of the granular tissue, lining the cavity.

COUNTER IRRITATION produces absorption similar to heat.

CUPPING is good in deep-seated inflammation.

LOCALIZED BLOOD LETTING may occasionally be used.

In Moist Cupping the tissue is scarified.

After Suppuration takes place a free opening should be made for the escape of pus. Pointing to Nature's way of relieving pus and it is preceded by a yellowish white opaque spot on the surface. It is rarely desirable to wait for Pointing, as some of the pus may be diffused and absorbed, causing Pyaemia. In making its escape pus always progresses in the path of the least resistance.

The existence of pus may be determined:-

1. By an abatement of the pain and intensity of the inflammation.
2. By a rising temperature of the body at night; falling in the morning.
3. By a sense of elasticity or flowing called FLUCTUATION, which may be felt by alternately pressing with the fingers of each hand.
4. By chills of the body.

HYPERAEMIA is an increased blood flow in a part.

CONGESTIONIS is an usual amount of blood, the flow of which is not always active. It is always preceded by inflammation though it may exist without it.

OEDEMA is swelling caused by the infiltration of a larger amount of fluid than ordinary into a tissue from the blood.

CATARRH is a pathological condition of the mucous membrane associated with abnormal secretion of fluid. It may be acute or chronic.

MUCOID CATARRH has a mucous secretion.

PURULENT CATARRH has a secretion of pus.

MUCO-PURULENT has a mixed secretion.

CAUSES OF CATARRH.

PREDISPOSING CAUSES may be any of the general predisposing causes of inflammation.

EXCITING CAUSES ARE:-

1. Irritation of any kind. (Bad teeth, ill-fitting dentures &c.).
2. Mechanical violence.

3. Chemical action. (Drinking an acid by accident).
4. Calcareous deposits.
5. Drinking over-heated fluids.
5. Sympathy with disease in another part. (as in the stomach
7. Eruption of the teeth in children.

SYMPTOMS.

1. The mouth is dry; the saliva viscid, and difficult to void
2. Usually a burning sensation in the mouth.
3. Redness and tenderness, chiefly in the gums.
4. Tongue is coated.
5. Tongue is soft, flabby and swollen.
6. Tongue and cheek show the impressions of the teeth.
7. Sense of taste is impaired.
8. Secretion is impaired, and the appetite is more or less lost.

Inflammation in the Mucous Membrane differs from inflammation in any other tissue, in that a large portion of the inflammatory products make their way to the surface and escape, so that the amount of swelling is comparatively small. There is also less tendency to suppuration than in any other tissues. If, however, the inflammation attacks the glands there may be suppuration and even ulceration. By ulceration is meant molecular death in soft tissues accompanied by a discharge of purulent matter.

An ulcer is a running sore.

TREATMENT OF CATARRH.

Remove the cause if possible. If the inflammation has been caused by diseased teeth, tartar, or an imperfect denture, this may be readily accomplished. In order to liquify viscid secretions Chlorate of Potash tablets may be dissolved in the mouth. Not more than 3 or 4 grains should be used in as many hours. However, their use should not be continued too long as they affect the kidneys. A mouth wash composed of 5 grs. of Chlorate of Potash and 5 grs. of Carbonate of Soda in an oz. of water will help to keep the mouth clean. In the case of children Carbonate of Soda with honey may be added to water and used as a mouth wash. An occasional result of wearing an artificial denture, Salivation may be noticed. This is due to hyper-sensitiveness of the nerves and may be relieved by painting the mucous membrane with diluted Nitrate of Silver (3 grs. to the oz.) once a day for a few days. Old people have an abnormal flow of saliva, which it is very difficult to control. Bromide of Potassium is probably the best treatment in such cases.

APTHAE OR APTHEOUS ULCERS.

Apthae are found to be the result of inflammation attacking the mucous glands. They are found inside the lips and upon the edges of the tongue and occasionally in other parts of the mouth. In an Apthae the mucous gland has been destroyed as well as the mucous

7 Ulcerata

Location — lower lip

Ulceration — 1 glands slightly enlarged

Symptoms — flamed and injested

1) Glands become translucent enlarged

2) Breaks down — ulcer

3) painful and troublesome

4) [illegible] (2 inflam — offensive

5) Last — in [illegible] healthy people

6) In strumous children may spread and be the size of split-pea

Treat —

1 Restore health, air. Exercise & good food

2) anaesthetise the area by carbolic acid

Stomatitis

Location — Inf of mucous membrane of mouth

A fluid is secreted which is not normal [illegible] is a fluid

Causes: 1 Irritants (hot gum ~~[illegible]~~ / want of cleanliness

3 Decayed teeth

4 Caustic

5 Inflammation from Syphilis

NB condition of mouth varies with the rest of the system

Condition: 1 Dryness in mouth

2 M.M. congested surface M. elevated in relief

3 Redness disappears, Epithelium thickening

4 Ulcerations

[illegible] often come long time

[illegible] | grinding of teeth — bad digestion

| local — mechanical appliances

| of from mercury [illegible]

membrane covering it. At times it is due to a closure of the duct of the gland, where the contents inflame and burst forth. They are red at first but soon become white and are always surrounded by a small area of acute inflammation. The cause is very obscure; some apparently healthy people having them habitually.

SYMPTOMS OF APTHAE.

They first appear as glandular nodules beneath the mucous membrane, which soon becomes hard. In a day or two a clear little vesicle may be seen at the spot. At this stage it is annoying but not painful. The clear substance becomes milky and the vesicle breaks up and allows it to escape leaving a little round ulcer which is extremely painful. After a period of from three to five days this ulcer heals up.

TREATMENT OF APTHAE.

Wait until the vesicle has opened and then apply Carbolic Acid directly to the tissue, forming an eschar and immediately relieving the pain.

THRUSH.

This is an infantile disease although it sometimes attacks some very aged persons. It is caused by a parasite vegetable Spore and is found only in such children as have not sufficient vitality to resist it, and in whom digestion is greatly interfered with. It has the appearance of a whitish curd closely adhering to the mucous membrane. [illegible]

Symptoms of Thrush.

The child becomes fretful; the mucous membrane is dry, hot and inflamed. Small, white, irregular patches of a curd-like substance which is intimately connected with the mucous membrane, are seen in the mouth. If left alone it usually runs its course in from a few days to a few weeks, when the patient recovers.

TREATMENT OF THRUSH.

Improve the diet and surroundings if necessary and give a mouth wash of Borax and Honey. The use of caustics is seldom necessary.

SIMPLE ULCERATION OF THE MOUTH OR MEMBRANEOUS ULCERATION.

This disease is found at all ages but usually when the system is debilitated. The tongue and the cheeks along the line where the teeth meet are favorite places. The first indication of this disease is a reddish patch covered with a yellowish membrane, which is quite adherent. The causes are not well known. It is commonly associated with debility and old age. This disease is irritating and painful. It does not heal readily, but may last for months. It is easily distinguished from follicular ulceration by its not being associated with Apthae. It may be easily distinguished from thrush in being yellowish instead of whitish and in not being raised above the surrounding surface to the same extent.

TREATMENT OF SIMPLE ULCERS.

Put the teeth in the best possible condition and remove any calcareous deposits. Keep the mouth as clean as possible and apply Boracic Acid (pulverized) to the surface of the ulcer two or three 3/ times a day.([illegible]

CANCRUM ORIS or
GANGRENOUS ULCERATION or
PHAEDENAENIS ULCERATION or
NOMA.

This is a disease of children which usually terminates in death. It comes on without causing any pain, the first indication being slight redness and swelling of the cheek. This swelling becomes hard and the skin over it has a glistening appearance. After this the internal surface is covered with a blib or blister and this giving way constitutes the ulcer. The ulceration advances very rapidly in all directions, the tissue appearing not to die slowly, as in ordinary ulceration, but in masses, so as to give it a gangrenous character. It soon perforates the cheek and attacks the jaws as well. At this time a greasy fluid comes away, having an extremely disagreeable odor. The vitality of the patient, which was low at first, sinks still lower and death results from exhaustion or the absorption of poisonous matter. This variety of ulceration differs from all other varieties in:--

1. The rapidity of its development.
2. The localization of the ulcer.
3. The foetid odor of the fluids.

TREATMENT OF CANCRUM ORIS.

1. Place the patient in better conditions, with good clothing and pure air.
2. Maintain cleanliness by the use of disinfectants (C_6H_6O, $HgCl_3$ &c.) Conley's Disinfectant Fluid or Boracic Acid are both good.
3. Use agents to maintain vitality, such as Cod Liver Oil, Tincture of Iron, &c., (five-drop doses).
4. Destroy the slough with Nitric Acid.

ABSCESSES OF THE TONGUE.

These may be Chronic or Acute, and may result from:--

1. Mechanical injury in the tongue, as biting it with the teeth, or wounding it with instruments.
2. Constitutional diseases, such as scrofula or syphilis.
3. The termination of ordinary glossitis.
4. Chemical action.
5. Poisons (strums, erysipelas, unclean instrument).

CHRONIC ABSCESSES are important as they are often taken for Tumors. They are usually found at the side of the tongue and as

what - B. (? origin).

Treatment of Hg poisoning
1) Stop the Hg.
2) Use antiseptic mouth wash + KI

Symptoms
1) Slow necrosing process
2. Bluish line on the gums
(3) Gums & salivary glands become swollen
4) Teeth become sensitive & loosen in sockets
(5) Gums bleed easily
6) Saliva has a metallic taste

the inflammatory products have become hard they resemble a tumor. They may be distinguished from tumors by the following:-

1. They vary in size from time to time.
2. They are tender when pressed upon.
3. A needle when passed up shows pus.
4. The history of the case.
5. Has no well-defined outline.

TREATMENT OF ABSCESSES.

Open the abscess. Evacuate the pus and wash the cavity with disinfectant lotion.

ABSCESSES AFTER EXTRACTION.

1. Due to poison from instrument used.
2. Due to other lymphatic irritation.

ABSCESS OF THE ANTRUM.

An abscess within the Antrum may be caused by:--

1. Dead roots of teeth with abscesses breaking through the floor of the Antrum.
2. Mechanical violence.
3. Caries of the bone.
4. Necrosis of the bone.
5. Infusion of purulent inflammation from the nose.
6. Foreign bodies lodging in the Antrum (insects, portions of roots.).
7. Closing of the opening into the nose.
8. External violence.
9. Exposure to cold.

THE PREDISPOSING CAUSES ARE SIMILAR TO THOSE OF INFLAMMATION?

SYMPTOMS OF ANTRUM ABSCESS.

If resulting from acute inflammation it is attended by pain, heat and swelling. If, however, it has been developed slowly it may cause only a dull aching pain and a sense of weight. If an opening remain into the nose, by closing the opposite nostril and forcing out the air, the pus may be forced. The walls of the Antrum become softened and bulge out and occasionally a pulsating motion may be felt. Sometimes this bulging partially closes the nasal cavity and at other times causes pointing on the face. An abscess may be distinguished from a tumor, as the latter expands the walls of the Antrum and causes them to feel hard, and at the same time pressing down the palate and separating the teeth. A hollow needle may be passed into the cavity, either through the facial wall or through the socket of the tooth. If pus is withsrawn an abscess is certain. The proper place to perforate the facial wall is back of the second bicuspid and as high up as the tissue will allow. The history of the case will help to form a diagnosis.

TREATMENT OF ANTRUM ABSCESS.

The treatment is often troublesome and the patient should be warned that from three to six months may be necessary to effect a cure. First of all make an opening either through the facial wall or through the socket of a tooth into the Antrum. If the teeth are all healthy and in position the opening should be made through the facial wall. To do this a crucial incision to the bone is made. The corners are then dissected back and a hole is drilled with a large bur or trephine. This hole should not be less than 1/8 of an inch in diameter and had better be still larger. If the opening is made through the socket of a tooth the drill may be boldly inserted as it can do no injury. In these cases a canula is always necessary and must be attached to a rubber plate, its lower orifice being closed by a cork. After the pus has been evacuated the cavity should be washed out with warm water to which a little Carbolic Acid has been added. Any foreign body in the Antrum should be removed. Maintaining cleanliness by syringing out two or three times a day with water. If this is not sufficient use a solution of Boracic Acid (10 to 15 grs. to the oz. of water).

Instead of Boracic Acid may be used:--

1. Nitrate of Silver, once a week; (5 grs. to 1oz.)
2. Carbolic Acid. (1 in 20).
3. Aromatic Sulph. Acid. (very diluted).
4. Tinct. Iodine, (10 drops to oz. up to full strength).

The best treatment is perhaps Boracic Acid once a day at all other times simple warm water.

If the opening into the nose returns the canula may be removed as the parts become healthy, leaving the plate to protect the opening. If no opening into the nose exists, the canula must either be worn permanently or an opening made. This is a simple operation and is performed by perforating the nasal wall. It is not necessary that the opening be at the same place as the original one.

OSTITIS AND PERIOSTITIS.

The inflammation of bone and periosteum usually accompany each other. The causes are predisposing and exciting. Bones in active growth are predisposed.

The predisposing causes are:--Syphilis, Scrofula and Malaria, debility from any cause, or breaking up of the vital equilibrium.

The exciting causes are Mechanical Violence, Poisons, &c.

If the inflammatory products die and the pus does not escape, Necrosis will result. Bone dies more readily than any other tissue from inflammation, since the unyielding walls of the vessels make stagnation very likely to take place.

SYMPTOMS OF OSTITIS.

Deep-seated, throbbing pain.

NECROSIS.

Necrosis begins by infl. either periostital or ostital, or both. As a result of the infl. in bone a change takes place in the organic proportion of the new bone. In ordinary infl. the vessels di-

late and become sticky. In bone the vessels become sticky but do not dilate, on account of the bony walls surrounding them. Stasis takes place more readily therefore and spreads itself over a greater area of the tissue than the softer tissue. Nourishment being thus cut off, that portion of the bone dies of starvation. Even if the blood vessels supplying the bone, independent of ostitis, the part will die from starvation. In the area surrounding the part that has actually died, the matrix substance becomes somewhat softened and liquified enlarging the Haversian Canal. This area of softened bone filled with infl. products, dies, and in and about the dead bone, forms a layer of pus. This in turn is surrounded by an area of increased irritation. As a result of this increased irritation and the determination of blood to the part, new bone is deposited, as though Nature was trying to strengthen the diseased bone, as is doubtless the case. Accompanying Necrosis there are always one or more fistulous openings.

A SEQUESTRUM is a dead portion of bone.

A CLOACA is a fistulous opening.

A SHEATH is a newly formed bone. As long as any portion of the dead bone remains these will be found. The sequestrum is either forced to the surface or else absorbed by the granulation tissue growing and pressing against it.

TREATMENT OF INJURY LIKELY TO RESULT IN NECROSIS.

. Lessen the amount of inflammation products as much as possible by the use of COLD. Then preserve those products alove and facilitate their absorption by heat or counter-irritants. If Necrosis has actually taken place, keep the parts clean and make openings for the escape of pus if there is not already one. Nothing more can be done until the necrosed portion becomes separated from the rest of the bone, which may require months for its completion. Then we can assist nature in removing it by removing the Cloaca and taking out the Sequestrum. Necrosis may be distinguished from Caries by:--

1. The Cloaca.
2. The rattling sound given off when touched by a probe.

NECROSIS OF MAXILLARY BONES.

Besides the general causes, Necrosis of the Max. bones may result from:--

1. Mechanical violence.
2. Diseased teeth.
3. Mercurial poisoning.
4. Scurvy.
5. Syphilis.
6. Phosphorous poisoning.
8. Eruptive diseases. (Exanthemata).

The Inf. Max. is less vascular than the Sup. Max. and hence is more subject to Necrosis.

SYMPTOMS OF NECROSIS.

Pain, swelling, hard lump after sheath has formed, fistulous openings and purulent discharges.

NECROSIS FROM ERUPTIVE DISEASES.

This variety is most common in children from five to twelve years of age. A month or two after the disease pain is felt in the jaw, followed by a discharge of pus from one or two openings. The active changes taking place in the jaw at this time probably have much to do with causing the Necrosis. The Alveolar process is most apt to be attacked and when it comes away it brings one or more teeth with it. These are the only permanent effects.

TREATMENT OF NECROSIS.

Keep the parts clean until the sequestrum becomes loose and then remove it by making an incision. By the use of a probe it may be determined when the sequestrum has become loose. Cleanliness may be kept by means of Boracic Acid, 10 to 15 grs. to the oz.

NECROSIS FROM ARSENIC.

This may be caused by Arsenic escaping from the cavity of a tooth. Necrosis in these cases is quite superficial and is limited to the septum of the sockets and the teeth they contain. It is all over in a couple of weeks.

TREATMENT OF ARSENIC NECROSIS.

Maintain cleanliness and remove the dead bone when it separates.

NECROSIS FROM PHOSPHOROUS POISONING.

Persons working in match factories are particularly subject to this variety. It is seldom found in this country. The phosphorous usually gains admittance through carious openings of the teeth. This variety shows extensive death of bone tissue. It progresses slowly and may extend over a considerable time. There is great swelling and extensive formation of new bone. The suppuration is great and the pus finds its way out through external and internal openings (fistulous). This variety may be diagnosed by:--

1. Extent of disease.
2. History of the case.

TREATMENT OF PHOSPHOROUS NECROSIS.

1. Maintain the strength of the patient by Cod Liver Oil or any nutritious food.
2. Facilitate the discharge of pus.
3. Remove dead bone as soon as separated and sometimes even before, by surgical means.

GENERAL DIAGNOSIS OF NECROSIS OF BONE.

1. Inflammation followed by suppuration and fistulous opening.
2. Location. (Most apt to occur in Inf. Max.).

3. Thickening from the ~~teeth~~ Sheath.
4. A probe introduced through one of the Cloacae.
    (a) Does not cause pain or much hemorrhage.
    (b) Gives a click or rattling sound.
    (c) Bone is hard, rough and denuded of Periosteum.
5. If the bone can be seen it is of an unnatural color and is insensible to pain.
6. Sequestrum can be moved about if loose.

An abscess near a bone may denude it of its Periosteum.

Necrosis is distinguished from an abscess by:--

1. Its longer duration.
2. Its greater extent.
3. Its formation of new bone.
4. The sequestrum (if separated).
5. Tender and painful in abscesses.
6. The pus from Necrosis has more intense odor.

Caries may be distinguished from Necrosis by the following:--

1. In Caries the probe reaches a soft granular mass and causes considerable pain and hemorrhage. In Necrosis the bone is hard, and the probe causes but little pain but hemorrhage.
2. Caries is most apt to attack Sup. Max.

Necrosis is most apt to attack Inf. Max.

To prevent Necrosis use treatment for Ostitis and Periostitis. If the attack is acute, general treatment to dilate the capillaries may be employed. Heat produces this effect, and so bathe the feet in warm water. If developed slowly, counter-irritants as Iodine and Aconite are useful.

1. Lessen the inflammatory products.
2. Preserve their vitality.

TREATMENT OF NECROSIS.

1. Allow pus to escape freely.
2. Keep parts perfectly clean.
3. Remove the bone when separated by enlarging Cloaca and using forceps. As a rule it should not be interfered with until separated. An exception to this rule is sometimes taken in the case of phosphorous poisoning.

CARIES OF THE BONE.

This disease causes the bone to die by molecules. Necrosis causes it to die in masses. Its causes are similar to those of Necrosis. It is most apt to attack cancellous bone; therefore, it is found oftener in the Sup. Max than in the Inf. Max.

Caries resembles Ulceration in soft tissues.

Necrosis resembles Gangrene in soft tissues.

PREDISPOSING CAUSES:--

1. Scrofula.

2. Syphilis.
3. Fevers.
4. Improper and insufficient food.
5. Old age.
6. Exposure to climatic changes.
7. Low vitality.

EXCITING CAUSES.

1. Mechanical violence or irritation.
2. Foreign bodies lodged in the bone.
3. Germs of Scrofula or Syphilis.
4. Decayed teeth.

Caries is a softening process of the nature of Chronic Infl. It may occur on the surface or deep in the substance of a bone. It is usually but not necessarily associated with abscesses and fistulous openings. In healthy constitutions Nature makes an effort to limit it by organizing the infl. products around the outside and forming a wall of bone surrounding it. When Caries begins on the surface it is attended with Periostitis. The Periosteum swells and softens. The Halversian Canals enlarge and their walls soften. Pus may be found at any time, and in that case a fistutious opening will be established.

CARIES IS DISTINGUISHED FROM NECROSIS:--

In Caries suppuration comes late.
In Necrosis " " early.
In Caries there is less pain and swelling.
In Caries a probe causes pain and bleeding.
In Necrosis " " neither.
In Caries a probe strikes a soft substance.
In Necrosis " " " hard "
In Caries no sequestrum may be felt.
In Necrosis " " " "

SYMPTOMS OF CARIES:--

1. Localized swelling.
2. Tenderness on pressure.
3. Redness.
4. Softened swelling surrounded by a hard ridge.
5. Gnawing pain in the heart.
6. Teeth drop out from absorption.
7. Pus is thin and watery.

TREATMENT OF CARIES:--

1. Remove the cause if possible. (diseased roots of teeth).
2. Remove the products of the disease.
3. Improve general vitality.
4. Avoid exertion of any kind.
5. Seek healthy surroundings.
6. Give proper food and clothing.

Cellulitis

Erysipelas [illegible]

1 [illegible] spreading the surface

2 [illegible]

4 [illegible] cellulitis ([illegible])

7. Maintain cleanliness.
8. Use tonics; Chinchona (better than Quinine).
9. Lance so that fluids and debris may escape.
10. Wash out with a solution of Boracic Acid.
11. Use counter irritants to quicken the circulation. (Tr. Iodine).
12. As a last resort gouge out some of the softened bony tissue.

ERYSIPELAS.

Erysipelas is an infl. affection resulting from specific inoculation. It is characterized by an intense infl. which is always associated with constitutional changes. The cause is a specific erysipelas germ which either finds a lodgement in the tissue from the atmosphere or is carried to the part by the circulation. ([illegible])
not blood

SUPERFICIAL VARIETY.

This attacks the nose, chin, cheek, &c. Its cause is not very well known.

LOCAL SYMPTOMS:--

1. Localized swelling.
2. Redness.
3. Burning, itching sensation.

It increases in area and swelling and vesicles soon appear on the surface first attacked. It begins to first get well at the place where it originated. Besides the local symptoms there are others of a general character.

CONSTITUTIONAL SYMPTOMS.

1. Chills.
2. Loss of appetite.
3. Headache.
4. Pain in the loins.
5. Highly colored excretions.
6. Tongue furred.
7. Imperfect digestion.
8. Elevated temperature of the body (3 to 5 degrees).
9. Constipation.
10. Prostration and loss of flesh.

This disease usually runs its course in from 8 to 10 days or till the strength of the ferment is spent.

DIAGNOSIS.

Erysipelas is distinguished from Alveolar Abscess by:--

1. Constitutional symptoms.
2. The swelling being absent over the Alveolus but being present in the cheek.
3. The history of the case.
4. The teeth being possibly healthy.
5. The vesicles.
6. Pain is burning; in an abscess dull and throbbin

ERYSIPELAS MAY TERMINATE:--

1. By resolution and gradual return to health.
2. By suppuration and the formation of deep abscesses.

If it extends to the scalp the hair falls out, and it may even penetrate through the skull and attack the brain. It may also spread inwards from the lips towards the fauces and in these cases nearly always always proves fatal.

TREATMENT.

The treatment may be constitutional and local.

1. Paint with Collodion.
2. Give a blue pill.
3. Give Tr. of Iron in doses of 10 to 20 drops, largely diluted, three or four times a day.
4. If abscesses form, lance them freely and wash them with disinfectant lotions.

See pg 849.

WOUNDS.

A wound is a solution of the continuity in any of the soft tissues, accompanied by breaking through the skin.

A contusion is an injury which is accompanied by a solution of the continuity of the soft tissues without a breaking through of the skin.

Wounds are divided into Incised, Punctured, Contused, Lacerated, Gun-Shot, Penetrating and Poisoned.

Incised Wounds are those made by a sharp cutting instrument. They have greater length than depth, abrupt edges and bleed freely.

Punctured Wounds are those made with a pointed instrument. Their depth is much greater than their superficial area. As a rule they do not bleed much unless some large vessel is ruptured.

Contused and Lacerated Wounds are attended with considerable bruising and tearing of the soft parts. They are made by falling, getting run over, bit by a dog, saw wounds, &c.

Penetrating Wounds are such as penetrate one of the cavities of the body, as the abdomen, antrum, &c.

Poisoned Wounds may include any of the above. Under this head may be included snake bites, rabbid dog bites, rusty nail wounds, &c.

TREATMENT OF WOUNDS.

In the treatment of a wound the first thing to be done is to arrest the hemorrhage. In poisoned wounds, however, bleeding should be allowed to continue for some time. Hemorrhage may be either venous or arterial, or both. Venous hemorrhage generally ceases of its own accord, the only treatment in any case that is necessary being simple pressure.

Arterial Blood may be known by:--

1. Its bright red color.
2. Its flowing in jets corresponding to the contractions of the heart.
3. The force with which it flows from the cavity.

Rheumatism { mechanical
imperfect ([illegible] [illegible] the [illegible]
[illegible] [illegible] [illegible]

W W

Joints become [illegible]
must be [illegible] [illegible] [illegible]
[illegible] [illegible]

Treatment -
Give
{ salicylate of sodium }
{ or the of potass }
{ [illegible] salts of
{ [illegible] [illegible]

Increase perspiration
and the [illegible] of action.

Lec 7. Dec 1 - 98.
Hemorrhagic diathesis. - Predisposed to hemorrhages on account of
chemical imperfection of the blood, lack of fibrin forming. May be
only an oozing, just by the drop. It is hereditary in some instances, in
others it is acquired. In certain diseased conditions blood may acquire this
condition. Diseases causing this predisposition -: Prolonged fevers, Typhoid
°They are dangerous subjects for any operation for some time.
small pox. Prolonged attack of Grip - scurvy. Tuberculosis in incip-
ient stages. After Diptheria and after many eruptive diseases in
childhood - Indigestion. Children usually have it hereditary.
Most prominent symptom is Anaemic, pale lip, pasty looking.
Bruises leave a spot Ecchymosis. No other certain knowledge that
there is this condition present till wound is made. Dont extract a
number of teeth for such a patient at one sitting. One at a time.
Feel your way. Danger in wounding the mucous memb. It is
very vascular. If the patient is in fair health seldom does hemorr-
hage go on to death; but may have extreme prostration. Syncope
for couple of hours. The Hemorrhagic tendency varies in
intensity. So, use simpler remedies first - Astringents applied
locally. Warm solution of alum. In more dangerous symptoms
use pernitrate or persulphate of Iron. Slight pressure on
hemorrhagic area in connection with strong astringents.
Wash out the clot and pack socket from apex to base with
cotton saturated in persulph. of Iron. Impression compound
is as good a compress as we can get. Dont want a too resistant
compress. Any pressure on soft tissues in the area to cause
sluffing will enlarge the hemorrhagic area. Patient requires
perfect rest and quiet. Head somewhat raised, Ice bags to jaws.
cotton saturated with some Fe. sol packed in socket. Dont
meddle with treatment, allow quiet for several hours. Notice
the saliva. Dont be alarmed at slight discoloration; It is from
disintegrated clot. Give cold drinks if necessary. Nothing to eat.
If blood still flows, the fresh blood can be seen in saliva, fill the
mouth with strong alum solution. Keep in 20 min or hour.
Dont allow patient to expectorate at all. Little reliance in in-
ternal remedies, Ergot in small doses. Dont prolong, will
cause gangrene at end of fingers etc, closing or blocking the cap-
illaries. Rye contains a lot of Ergot, so dont use too much rye
bread. 10 MM doses every 3 hrs for a day or two is alright.
Acetate of lead and Opium - with vinegar - which wont allow
carbonate to form and cause lead poisoning. Opium gives
sleep. A D ffusable stimulant, Local remedies are most reliable.
These means are for temporary arrest. Nature supplies the
permanent arrest by reorganization. Clot in end of vessel
is dead material, it liquefies and is reabsorbed and
new living material is deposited there. There is a process of Inflam
Fibrous tissue is formed and the blood vessel wall reconstructed
and narrowed to the smaller outlet. Transfusion of blood
from another individual or animal. When Hemorrhage is
stopped, Cleanse the wound, wash little as possible, because
washing lowers the vitality. ~~antis~~ aseptic water is best. Water that has
been boiled and cooled to 100°. Antiseptic fluid necessary if germs
or poison present. 1 in 1000 Bichlor. of Hg or 1 in 20 carbolic.
1 in 40 if simple antisep. washing.

4. Its having only a slight tendency to stop itself. It is sometimes difficult to distinguish between arterial and venous blood. In these exceptional cases, however, the history of the case will enable us to determine which it is.

THESE CASES ARE:--

1. Hemorrhage from an artery under an anaesthetic, particularly Nitrous Oxide, is more or less Venous in appearance
2. Blood from veins lying immediately over an artery may flow with a jetting motion.
3. When the quantity of blood remaining in the body is small the flow from a vein may be pulsating.
4. A dilated condition of the capillaries may cause a nervous pulse.
5. There is a jetting flow from the veins corresponding to the movements of respiration, 14 to 18 times a minute.
6. Venous blood resembles arterial after exposure to the air

NATURE'S METHOD OF ARRESTING HEMORRHAGE.

These are Temporary and Permanent.

TEMPORARY.

1. The cut vessel contracts and retracts into the tissue. This is due partly to the elasticity of its walls and partly to the decrease in blood pressure.
2. By the formation of a clot in the mouth of a vessel extending back as far as the first anastomosis as well as a clot in the wound itself. These may be washed away by the flow of blood.
3. By the lessened blood pressure and feeble action of the heart, after a considerable amount of blood has been lost. The feeble action of the heart may be due to:--
   - (a) A nervous condition of the heart.
   - (b) Want of nutrition of the heart.

This condition may be best seen when the patient faints, and in these cases no effort should be made to revive the patient as the fainting condition is favorable.

PERMANENT.

As a result of the wound itself as well as the clot which acts as an irritant, inflammatory products are thrown out in the region of the wound. Blood cells from the blood which circulates through the anastomosis as well as the new corpuscles and microcytes from the "vasa vasorum" (vessels of the walls of the artery) find their way into the clot which soon liquifies while inflam. products take its place. By the multiplication of the liberated tissue cells from the vicinity this

liberated tissue cells from the vicinity this mass is organized and the vessel is permanently closed by connective tissue.
At the same time a similar process is going on in the wound itself which heals up so that any possibility of hemorrhage is done away with. On account of anastomosis dangerous hemorrhage may take place from both ends of a cut vessel. Danger from hemorrhage is not due so much from the quantity of blood lost but from the rapidity. A quart of blood , rapidly drawn from a large vessel, might cause death, while 8 or 10 quarts mught be gradually lost without causing any alarm.

THE ARTIFICIAL METHODS OF ARRESTING HEMORRHAGE MAY ACT:--
1. Mechanically.
2. Chemically.
3. Through the system.

Among the agents employed are, pressure, cold, exposure, Hot Water, actual cautery, styptics, ligatures, position of the body, torsion of vessels.

STYPTICS areremedies which cause contraction of living tissue and also coagulation. (Solution of Alum). (Tannic Acid. Persulphate & Perchloride of Iron. Cold, Hot Water, Escharotics).

Cold is useful where the bleeding is from numerous vessels or from an abraded surface. It acts by contracting the tissues and lessening the determination of blood to the part.

THE BEST STYPTIC is a hot saturated solution of Alum. A solution of Tannic Acid in warm water is also good. Neither of these is Escharotic. They also cause a sort of chemical or artificial coagulation.

These failing, use Pernitrate, Persulph., or Perchloride of Iron. These are Escharotic and should be used only as a last resort.

The actual Cautery is very valuable especially under an anaesthetic.

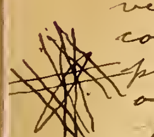
Torsion of vessels may be employed in small vessels. The artery should be grasped and twisted nearly or quite off.

LIGATURES.

In the case of large vessels ligatures should be applied. These may be of silk twist or carbolized catgut. The vessel should be picked up and the ligature should be applied and fastened by a square knot.

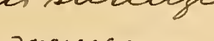
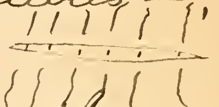
Lec 8. Dec 5 '98.

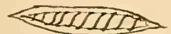
Germs of organic life must be washed out and also all visible foreign matter. 1 in 40 carbolic is cleansing and not injurious to the tissues, but destroys ordinary vegetable germ, 1 in 18 or 20. carbolic may be used to destroy spore. Must have coaptation of parts in all wounds to assist healing. This is brought about by adhesive plasters, Put on in strips long enough to hold the integument some distance on each side of wound and hold parts in place. Put on diagonally. Rubber plasters are best - court plaster is no use for intentional purposes, Only good for aesthetic purposes. Healing is not helped under any plaster - Coaptation of the parts is only benefit derived, and that is necessary. Application of court plaster to a wound is dangerous - not sterilized. Put antiseptic powder on before applying any plaster. Wounds most inclined to gape are those cut across the muscular fibres, So, in cutting always cut in line of long axis of fibres if possible.

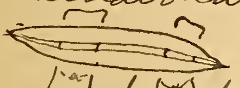


utures)

Coaptation of parts of sutures ;. These are made with some material thoroughly sterilized - Silk twist is best; just strong enough to overcome the tension, Silk worm gut is good, and easily sterilized. Catgut is too gross and is difficult to sterilize too. Modes of application of Sutures -;

1. Continuous  2. Interrupted, at intervals 

3. Subcutaneous. The continuous is sometimes applied subcutaneously, needle in the subcutaneous tissue only  "Buried sutures" in wounds of face.

4. Interruped may be used subcutaneously to bring sides of a deep wound together under the integument, called the "Matress Suture." or retention suture , These are all tied with ordinary square knot. When the wound is properly coapted, a dressing is necessary. Antiseptic or sterilized dressing. Antiseptics - Moist and Dry. Dry is most used. Materials used. An antiseptic wound. Boric acid and Iodoform - equal parts. or either. powdered on the wound, then the dressing. Iodoform gause - Made by moistening gause with glycerine then rubbing in Iodoform powder. Ordinary open cheese cloth. The gause is sterilized first in hot oven, or in boiling water - two layers. Then Borated gause, prepared by boiling gause in 4 or 5 grs Boric acid to Oz H_2O. Then dried. Bichloride gause is made on the same way. Put on 10 or 12 layers of Borated gause.

1 or 2 ~~of~~ layers of Iodoform gause. 10 or 12 of borated gause. Then inch of absorbent cotton. Have dressing cover parts couple of inches on each side of wound. Catgut is hard to antisept. Usually done by heating in antiseptic oils. The dressing should be retained by the ordinary cotton bandages.

Finger. Band. 1" Ordinary, 2". Body Band. 6".

Don't interfere with the dressing unless the wound becomes painful or patients temperature suddenly rises or if dressing becomes saturated with discharge from the wound. Otherwise the dressing is left till the wound heals. Three, five or ten days. Dress second time same as the first. When healing has taken place remove the sutures. May be necess. to restore dressing for day or two after removal of suture. Don't remove buried sutures, have to be absorbed. If the wound has suppurated remove all irritating dressing cleanse the wound and dress with a dressing non irritating yet capable of destroying pus forming germs. Per ox of H. is best, as it irritates surrounding tissue to some extent. A wound that has suppurated must be dressed every day untill suppuration ceases. Then leave dressing as described above.

As a rule thay may be drawn tight enough to cut through the Middle and external coats but this is not really necessary. They should be first steeped in a solution of Carbolic Acid (1 in 20) or in Bichloride of Mercury (1 in 1000). The catgut should be about as thick as an E violin string.

THE ADVANTAGES OF SILK ARE:--

1. Easy to procure.
2. Easily kept.
3. Easily tied.
4. The knot does not slip.

THE ADVANTAGES OF CATGUT ARE:--

1. More easily liquified and absorbed.

With catgut it is necessary to tie a knot and a half. Hot water acts as a Styptic by coagulating the albumen. Warm water encourages bleeding. The water should approach 160 F.

SECONDARY HEMORRHAGE.

This is at times very dangerous. It may arise from:--

1. Sloughing away of the ligature.
2. Bursting of an artery wounded by a bullet.

It usually occurs about the 6th day, and, if slight, simple remedies should be applied. If serious, the artery must be again ligated either in the wound or at some point nearer the centre of the system. After the hemorrhage is arrested the clot liquifies and is reabsorbed and the vessel and wound heal up by the formation of new connective tissue. The blood then finds its way through smaller anastomoses which become enlarged and new channels are formed as well on each side of the obliterated artery.

After the hemorrhage has been arrested the wound should be thoroughly cleansed from all foreign substances, as dirt, clotted blood and micro-organisms. The wound should be washed with hot water which has been boiled to destroy all germs; and the germs should be destroyed by the use of an antiseptic solution of $HgCl_2$ (1 in 1000); or C_6H_5Oh (1 in 30).

Warm water should be used to maintain the vitality of the tissue. The disadvantages of the Bichloride Solution is that it rusts instruments.

The disadvantages of using Carbolic Acid is that if used over a large area it may be absorbed and cause poisoning. An advantage in its use is that in painful wounds it paralyzes the end of a nerve and thus relieves pain.

DRESSING THE WOUND or COAPTING THE SURFACES is the next step. In doing this the tissues should be replaced carefully. The edges of the wound may be kept in their places:-

1. Plasters.

2. Sutures.
3. Pins.
4. Bandages.
5. Position of wound, (Injury to the joint or some other part).

PLASTERS are valuable and are used in connection with small wounds with straight edges. The common Resin plaster applied by heat is the best variety. Court Plaster should not be used as it acts as an irritant. It also loosens if an effusion takes place beneath it.

Plasters should be applied in long strips transversely. The strip should be heated and one side applied as far as the wound, and the edges of the wound should then be drawn together and the other half applied. The strip should be long enough to give the strips a firm hold. In removing these strips loosen one end first and then hold the wound together while removing the other.

SUTURES ARE EMPLOYED IN ALL LARGE WOUNDS:

They are made of:--

1. Silk twist ---Wounds of Integument.
2. Carbolized Catgut ---When it is desirable to leave the suture and allow it to be absorbed.
3. Metallic wire. ---Internal wounds and those of the M.M.

KINDS OF SUTURES.

1. Interrupted.
2. Continuous.
3. Quilled.
4. Figure of 8.

The Interruption is the variety most used. A needle is served with a thread, passed through the edges of the wound, and the end of each stitch is tied separately. The depth of the stitch and the distance from the edge should depend upon the torsion. Usually the stitches are from 1/4 of an inch from the edge. This variety is used in all lacerated wounds.

The Continuous is used when the line of injury is straight and the edges easily coa~~t~~pted. The thread is applied with a glove stitch.

ITS ADVANTAGES ARE:--

1. Easily applied.
2. Torsion is equalized.
3. The parts are nicely coa~~t~~pted.
4. Less scarring results.

DISADVANTAGES.

1. If one part becomes loose the whole becomes loose.

The Quilled is used in closing deep wounds. Double ligatures are passed through the edges of the wound and these extremities.

are tied over quills parallel to the wound.

Figure of 8 are used in the treatment of Hare-lip. A pin is drawn through the edges of the wound and these edges are drawn together by a ligature passing around the ends of the pins in the form of the figure 8. The sutures may be left until union of the edges has taken place, when the ends may be cut and the sutures drawn out. If there is danger of a wound reopening a plaster may be applied and left for a few days.

THE ANTISEPTIC TREATMENT OF WOUNDS has for its object the absolute cleanliness of the parts. There are two kinds: MOIST and DRY. In the MOIST treatment the solution of a germicide is kept constantly in contact with the wound. The germicide most frequently used is Corrosive Sublimate (1 in 3000).

It is applied by means of a cheese cloth pad of about 8 layers which has been steeped in the solution for some hours. It is then wrung out and applied to the wound so as to project beyond the wound in each direction, the farther the better. This is bound in place by a bandage of the same material also steeped in the solution, and the whole covered with silk or rubber to exclude the moisture. Should the wound become dry and painful the pad may be removed without moving.

INDICATIONS FOR REMOVAL OR DRESSING ARE:--

1. Effusion beneath the edge of the bandage forming a channel for the entrance of germs.
2. A rising temperature of the body and parts.
3. Pain in the part.

In the treatment dry, after the wound has been cleansed Iodoform is dusted over the surface. The wound is then covered with Absorbent Cotton, which prevents the entrance of germs, and then bandaged. It is employed about the face where the MOIST treatment cannot be used. The first dressing may be left from 5 to 10 days when the wound will be healed.

SUMMARY.

1. Arrest hemorrhage by Pressure, Cold, Exposure, Hot Water, Actual Cautery, Styptics, Torsion, and position of the body.
2. Thoroughly cleanse the wound from blood clot, dirt and foreign matter, generally with warm water previously boiled and an antiseptic dressing. Firmly imbedded materials may be removed with forceps.
3. Effect and maintain coaptation by Plasters, Sutures, Pins, Bandages and Position.
4. Guard against germs and also against excessive Infl. by antiseptic treatment.

HEALING PROCESS.

FIRST INTENTION------Wounds are alqays irritants and set up inflam. action. In connection there is always an exudation from the blood vessel of fluid and white blood corpuscles, into the wound. The intercellular tissue at the edges ~~od~~ the edges of the wound becomes liquified, liberating the tissue cells, which have a tendency to return to their original embryonal form. These inflammatory products fill the wound and soon become organized. Some of the cells are absorbed. The tissue celles however, multiply and develop connective tissue, so that the wound is healed up. This is called "Healing by First Intention" and is charcterized by there being no formation of pus. The integument if formed by an inward growth of the epithelium at wound.

SECOND INTENTION.------This is also called Granulation. If foreign bodies remain in the wound or gain admittance to it, or the edges cannot be brought together, some inflammatory products die and form a suppurating surface. In such a wound the inflammatory products form a layer on the surface of the walls of which the most superficial die and become converted into pus. The deeper cells are nourished by the underlying tissue and at certain points granules are formed by the extremities or loops of blood vessels being thrown out towards them. The granulations keep filling up the wound until it is entirely healed. The Epithelium is reproduced by an inward growth if epithelium from the edges of the wound. This takes place while granulations are being formed. If the granulations fill the wound before it has been covered over with epithelium considerable puckering and scarring may result. The procoss may be hastened by skin grafting. Epithelium possesses great vitality and will live for hours after the amputation of the limb. Small pieces of the lower layer of skin are scattered over the surface of the granulations which has been carefully washed with warm water. Each piece is covered with a little pieoe of oiled silk and the whole is covered with moist antiseptic dressing. The pieces of epithelium may be from the size of a pin-head to that of a pea, and each one that grows fast forms an island around which the development of epithelium goes on. The grafted pieces will become adherent in 2 or 3 days. By skin grafting scarring and puckering of the tissue is greatly reduced. After healing there is a redness of the part due to the increased vascularity, but this disappears and the scar tissue becomes pale from the scarcity of blood in it. Wounds ofter leave disfiguring scars. The slower the healing the greater will be the contraction and deformity.

Nature of healing process whereby tissues become permanent.
Two classes of healing: 1 By first Intention. 2 By suppuration or sec. Intention
Yet there is really only one process, one way.

First Intention. Wound in tissues - edges coapted.

All musc. fibres, capillaries, and connective tissue will be cut across. Perhaps large blood vessels too in area. All vessels that come to the incision must be closed by clot or coagulum. Circulation is only stopped at line of incision. As soon as capillary is cut it retracts and contracts, their bleeding is only momentarily. Hemorrhage is from veins or arteries, perhaps small.

Lec 9 Dec 8 — 9,8.

If parts are brought into close contact there must still be a process of healing an inflam. action and resolution. There is no immediate union of the severed parts; It may be rapid, but is healing by the first intention; perhaps in twenty four hours. The coagulation in mouths of vessels is a tendency toward death. While blood corps. are filling into the inflamed area and lymph flows over edges of wound, the fixed tissue cells loosen and float in the liquid. These are inflam. products, blood forms a part of it. Circulation is shut off in the area caused by the obstruction of vessels by inflam. products. This is no step towards healing, but the process of death. All irritation must disappear, then healing starts. The fixed tissue cells in inflam. products go back through lymph or are reconstructed and becoming embryonal begin to form their own tissue by multiplication. Cicatricial tissue - This may all be in 24 hrs, or may take a number of days. Just according to area and amount of inflam. products. Fixed tissue cells return to their embryonal form and proceed to form fixed tissue. Each cell produces its own kind of tissue. After healing the line is red and prominent, Redness is due to vascularity due to revascularization, then healing is complete. Healing tissue required a greater amount of blood, more blood corpuscles so the cicatricial tissue is red. They slowly atrophy and in a year or so they become less vascular than normal, so scar is then pale & glistening It may disappear in time. This is the essence of all forms of healing.

When area of injury is too great or infection of the wound, a portion of the inflam. products die and so we have a vacancy of living material a gap between the edges of wound and a suppurative process instead of resolution, so this is called healing by second intention. Every kind of dressing is an irritant, Pus is leaking away constantly. In this case of loss of tissue, exposure to air or a dressing gives a red glary appearance to the wounded surfaces. Then is the process of inflam. White corps. collect and may form a layer and surface of wound will not liquefy but will sluff off. The white corps endeavor to liquefy it, but in doing so become exposed to air and die, so this sluff may come away in small pieces. sluff comes off in from 3 to 7 days usually. So we now have an exposed area of white blood corps and separated fixed tissue cells. On the surface there is irritation and there they die and form pus which drops away. But new cells are multiplying underneath continually Dying on the surface but excluding irritant from the area below, so granulations grow and this organization & procedure of the resolution continues till the surface is reached. Vascularity proceeds in loops. A granular surface, nodules, granules are natural process of repair. Granulation tissue, this all fills up and gives the surface a regular appearance finally. Each granule is a nodule of vascularized inflam products. Reaches surface finally, but all the time they are growing their surface is inflamed and pus is coming away because of irritant-exposure.

Lec 10, Dec 12-98. — the Freshmen made a noise upstairs —

Granular tissue is formative cells in a process of reproduction. Embryonal in character and function. Cicatricial tissue, At surface the Epithelial cells multiply filling in from without upwards, and from below upward the other tissues. Cicatrization always takes place from Epithelium previous existing, Epithelial cells may be transplanted forming islands from which the tissue spreads. Epithelial tissue lives for some time after death.

Grafting. In case of destruction of epithelium over a large area grafting of Epithel. tissue is often resorted to. Can cut an inch square out and properly protected and nourished it will grow. Wash the area with a solution of carbolic, Bichloride or Boric acid. Cut off Epithelium; cut into small pieces and put on wound after it has ceased bleeding and is cleansed. Cover with antiseptic dressing, and oiled silk. Wash carefully with weak antisep sol. in couple of days and dress every two or three days.

Healing By scabbing, Effusion hardens forming a crust. Healing is delayed by any dressing or salve. Get minimum irritation for natures method is the only one so hinder as little as possible. Wound kept clean and septic will induce most rapid healing. If a wound is open germs in the air enter and are irritants in variable degrees. Dressing which prevents irritants helps healing, yet, that dressing must not be an irritant. Diluted solutions Bichlor Hg, carbolic or Boric acid. 3/4 inch of absorbent cotton will prevent entrance of germs. There is no healing in plaster. It is an irritant. Oto infection or automatic infection. May be germs floating through blood in presence of any disease. Germs carried from an abscess to wound and result is a suppurating wound. Want to know that a patient is free from oto infection before use of knife or extraction of a number of teeth. Not well to do a large amt of extraction for such person, diseased or abscessed. One or two extracted is sufficient, If an abscessed tooth, take it out — or treat — and when free from that it is time to extract further. Dont Expose patient to oto immigation.

Soar tissue is of low vitality.

A SCAB is simply the hardened effusion of the wound and scabbing is in reality healing by Second Intention.

PUNCTURED WOUNDS are treated like Incised Wounds.

CONTUSED AND LACERATED WOUNDS heal by Second Intention, and if the parts are much bruised and lacerated there is always suppuration.

While the inflammatory products are being thrown out these wounds should be treated with cold lotions, such as Bichloride of Mercury, 1 in 3000. After the first 24 hours the parts should be bathed with hot water to facilitate absorption. If it is found that the sutures of a wound are drawn too tightly they should be cut away. After suppuration has set in the sutures must be changed 2 or 3 times a day to maintain cleanliness. In about 5 days, when all the dead tissue has been washed by the pus, the parts may be cleansed and brought together. The granulated surfaces will unite if placed in contact.

In poisoned wounds the poison should be got out as soon as possible. Sucking the wound is one way of effecting this. This encourages bleeding. After this the wound is washed out with antiseptic fluid. Caustics are of doubtful value in these cases. PENETRATING WOUNDS ARE OFTEN VERY DANGEROUS.

GUNSHOT WOUNDS are lacerated and contused. They bleed very little but the tissue is destroyed in the path of the bullet, so that there is profuse suppuration and the separation of a large slough. When this slough separates at the end of 4 or 5 days it may open a large blood vessel and the patient may die from secondary hemorrhage. If no important organs are wounded by simply cleansing the wound and bringing the edges together it will heal by granulation. Small bullet wounds should be antiseptically sealed up and left alone without probing for the bullet.

Rapid healing may be delayed by:--

1. Constitutional causes, as Acrofula, Syphilis, Erysipelas, &c.
2. Locality, or where the muscles prevent the part from being quiet.
3. Nature of the wound.
4. Accidental infection of the wound or poisoning.
5. Mechanical injury.
6. Too frequent interference.
7. Caustics or other strong agents.
8. Supposed healing agents, as salves, liniments.
9. Exertion of any kind.

Rapid healing is facilitated by:--

1. Proper food and clothing.
2. Pure air and pleasant surroundings.
3. Absolute rest--physical and mental.

4. Constitutional remedies if necessary.

Wounds are liable to be attacked by erysipelas. Its germs may infect a very slight wound. Operations of all kinds, even the extraction of a tooth, are contraindicated if the patient is suffering from erysipelas in any part of the body. If a wound becomes infected with erysipelas healing stops at once. The new formed tissue, if any, sloughs away, and the tissue outside the wound may be affected. The pus given off becomes dark and bloody and gives off an intense odor. The swelling is extensive and is accompanied by the usual constitutional effects mentioned under erysipelas. It is treated locally by the application of heat and constitutionally by large doses of T. of Iron, 10 to 15 m. largely diluted. The pus should be removed as fast as it is formed. Wounds may cause blood poisoning which is known as Pyaemia, Septaecemia and Saporaemia. Between the first two there is not much difference, pus being formed throughout the system and abscesses in different parts of the body. Blood-poisoning results from diffuse suppuration in which the pus becomes infected with external germs, and is then absorbed into the system. Blood or pus drying upon an instrument becomes filled with germs and should never be used before they are cleansed and antisepted.

SHOCK.

Shoch may be defined as an impression upon the nervous system whereby a large proportion of nervous force is lost. It may vary from slightness to collapse resulting in death. It may result from mechanical or chemical violence or from mental impressions.

Fainting is a variety of Shock.

Symptoms of Syncope are Fainting.

1. Faintness.
2 Paleness of the skin.
3. Profuse cold perspiration.
4. Slow or deep respiration.
5. Feeble pulse.
6. Loss of consciousness.
7. Relaxation od sphincters while unconscious.
8. Voniting following unconsciousness.

Except in cases of severe hemorrhage the patient should be roused from the stupor.

Symptoms of Shock are similar to those of Syncope; viz.,--

1. Drowsy condition.
2. Skin pale and cold, and clammy perspiration.
3. Weak pulse.
4. Breathing slow and deep.
5. Occasional vomiting.
6. Muttering.

This condition may last from a few minutes to a number of

Fractures

Lec 11 Dec 15 - 98.

Mechanical injuries brought about by violence and suddenly - Falling on bone bringing about its dissolution or fracture - 1. Direct - dissolution at point of impact. 2. Indirect - Fracture some distance from point of impact. 3. Fracture by muscular action. Bone weakened someway and muscles strained fracture cause. Fractures. 1. simple - when bone alone is broken and no opening where air can gain admittance to seat of fracture. 2. Compound when air can gain admittance to seat of fracture. 3. Comminuted fracture when broken into many pieces a grinding of the bone. 4. Multiple fracture when more than one line of fracture. Fractures of Inferior Maxillary Bone. — Predisposing and determining causes. Predisposing Causes, - Those which weaken the bone, ~~by~~ disease, or condition of fragile bones. In old age bone ~~has~~ more of Mineral than Organic. Thus making bone more brittle. And the muscles seem to atrophy and offer less resistance to violent forces. Old person less active too, unable to protect themselves. Rickets, Inflam of bone, Tuberculosis, all weaken ~~the~~ bones. Active life strengthens all parts of the body. Extracted teeth predispose the Jaw, the bone being weakened. About half the bone is alveolar process, and this all absorbed leaves Inf Max small and weakened. Local diseases, narcosis of bone, caries, any form of tumor growing from the substance of the bone, all weaken the resisting power. Shape of the bone. The arch shape is stronger only so long as force is from front. Force to side of arch is likely to fracture and the point of greatest curvature is most liable to fracture. But the symphysis is strengthened posteriorly ~~as~~ and anteriorly, Anterior being everted - the mental process, Genial tubercles behind, greatly strengthening the bone. The weakest point of jaw is about the position of the first bicuspid. Long cuspid strengthens jaw there. Tooth is stronger than bone and the union of tooth with bone is stronger than the bone, so long cuspid is no predisposing cause. It strengthens. The mental foramen could hardly be a predisposing cause because of the tubular development around the foramen. But region of first bicuspid is end of or beginning of ridges and so bone is much thinner there. Neck of condyle is slender, but strengthened by the ridge in front and muscles, ligaments etc. — Immediate causes. - Fall on bone by direct or indirect violence or muscular action, but this is only when bone is weakened by some disease or other predisposition. Usually have compound fracture of Inferior Max. Tissues lying close to the bone inside, Compounded internally, seldom externally. Sometimes fracture is multiple. In accordance with line of fracture they are transverse, oblique or horizontal. The transverse is usually from direct violence, oblique from indirect. Horizontal or longitudinal where special predisposition. Whenever a bone is broken displacement takes place, Extent of displacement hours, depending upon the extent of injury, and may culminate in death. Children and aged persons are most susceptible to shock. The intensity of the shock of an operation may be lessened by:--

1. Anaesthesis.
2. Exciting courage in the patient--lying if necessary.
3. Occasionally by the use of stimulants.

TREATMENT OF SHOCK.

1. Place the patient in a recumbent position to lessen the work of the heart.
2. Apply heat to the surface of the body by means of flannels, jugs of hot water, heated bricks, &c. Do not expose patient to draft.
3. Stimulants may be used cautiously.

FRACTURES.

According to directions they may be used:--

1. Transverse, directly across the bone.
2. Oblique, obliquely across the bone.
3. Longitudinal, lengthwise of the bone.
4. Multiple, in more than one place.
5. Comminuted, broken into small fragments.
6. Greenstick, in young children.

A Simple fracture is one in which there is no communication from the surface to the seat of injury.

A Compound fracture is one in which there is an opening to the seat of injury.

A Complicated fracture is one which is accompanied by other severe injury, such as dislocation.

A fracture is due to direct violence when the fracture is immediately beneath the external part that received the injury.

A fracture is a solution of continuity in bone brought about suddenly and by violence.

A fracture is due to INDIRECT VIOLENCE when it is at some distance from the part that received the violence.

A fracture is spontaneous when it is brought about by muscular action.

FRACTURES OF INF. MAX.

PREDISPOSING CAUSES:--

1. Loss of teeth.
2. Absorption of Alveolar Process.
3. Alveolar Abscesses.
4. Tumor of bone or associate parts.
5. Caries of bone.
6. Necrosis of bone.

7. Old age.
8. Ostitis.
9. Overstraining of muscles.
10. Imperfect formation.
11. Syphilis, Scrofula, Rheumatism.
12. Childhood. (Greenstick fractures, separation of epiphysis)

EXCITING CAUSES.

1. Direct violence.
2. Indirect violence.
3. Muscular action.

The Inf. Max. is not easily broken, because:--

1. The jaw is movable.
2. The head is movable.
3. The centre of the arch, which supports the greatest strain, has its lower border averted and is also thickened.
4. It is slightly elastic.
5. The Inter-articular fibro-cartilage serves as a pad.
6. The Coronoid and Condyloid processes are protected by thick muscles, a strong fascia and the Zygoma.
7. The Ramus is covered by the Masseter Muscle.

Fractures of the lower jaw usually occur about the 1st Bicuspid tooth. These fractures are nearly always compound as the gum is thin and adherent to the bone.

SYMPTOMS OF FRACTURES.

1. History of the violence.
2. Increased and unnatural mobility.
3. Grating sound heard most plainly by the patient.
4. Line of fracture may be felt.
5. Line of teeth is interfered with.
6. Symphysis falls towards the injured side.
7. Articulation of the teeth is changed.
8. Severe pain.
9. Bleeding of the mouth.
10. Loss of function.
11. More or less swelling.
12. Breaking sound heard by the patient at the time of injury
13. Speech interfered with.

BILATERAL FRACTURE.

1. Jaw falls downward.
2. Anterior teeth project outward.
3. Posterior part of the jaw drawn up.
4. Mouth is open in front but closed behind.
5. Symphis is in median line.

depend on character of fracture and the violence, Muscles Invol & Vol,
and tissues contract aiding the displacement. The parts can never be put
back accurately to place from which broken, but can restore function;
Green stick fractures usually in long bone; No complete dissolution, Only a
bending. This is found in case of children only.

Lec 12 Dec 19-98.

When bones are broken its function is lost. Unnatural movement. Crepitus
- sound of grating of broken parts. Bleeding is common symptom of fracture
of max. Bone. The line of fracture can invariably be felt. Fracture of the coronoid
process is more difficult to diagnose. Broken Maxillary bone is easy to replace
but difficult to retain in place, As soon as let go it falls away. Fracture of condyle
is especially obscure and may be mistaken for dislocation. In case of fracture
the symphisis always falls toward the injured side, not being sustained
in position. Displacements of various fractures. Fractures through the body
If condyloid process is broken it is drawn up by muscular contraction.
The posterior portion is always sustained by muscles, but in the body of bone
the force is other way having little muscular attachment and that from
beneath & so body of jaw drops if a bilateral fracture. The approximal
fragment articulates anteriorly. The Distal is backward (?)

Longitudinal Fracture. Usually the alveolar process with six anterior teeth
The force knocks it inward but tongue tips it forward invariably. If
in the ramus there is little displacement, No displacement visible if coronoid
process is broken; It is drawn up by the temporal muscle. Always direct violence
The tendinous portion may hold the parts together if not broken itself. The
neck of the condyle rarely gives way. There is little displacement, but loss of
function. Notice the articulation first, always.

Treatment,

Treatment of fracture - Setting fractured member. Replacing fragments to
natural position as far as possible, then some means to retain them there
There is so short leverage on fragments and it is also difficult to keep fragments
at rest; as patient must be fed. There are various means used to keep fragments
in place. Cant bandage the teeth to the uppers. Try to establish a natural
articulation and so restore function of the bone. Function first in all
operations. Cant bandage because there is no opposite support. Could not
be bandaged tight enough to hold. Want force upwards and forward.
Interdental splints. No surgeon can treat fracture of jaw apart from
Dentist. Fixed and Movable interdental splint. Movable - Must fit
over crowns of teeth. Fragments must be in their place when splint is applied.
Take impression of superior arch and make a model. Take impression
of fragments with aid of assistant, Holding fragments in place. Or take
impression of one fragment and then other, Make models. and trim
fragments to articulate to upper model. Get perfect inferior arch.
Wax up and make vulcanite splint and put in putting teeth in
the vulcanite and have elastic band under chin.

6. Crepitation, bleeding, &c.

LOGITUDINAL FRACTURE.

This is most apt to occur when the six anterior teeth remain alone, the others haveing been extracted for some time. The Anterior part of the jaw then slips off.

1. The body of the jaw remains intact.
2. The anterior part of the jaw is very movable, and the teeth project forward.

FRACTURE OF RAMUS.

This is usually at the neck of the Condyle and is the result of indirect violence. It may occur at the Coronoid process also, but not often at the angle as the jaw there is strengthened by ridges int. and ext. and also by a strong muscle.

FRACTURE OF NECK OF CONDYLE.

This may be taken for dislocation or Contusion. The symptoms are:--

1. Imperfect articulation.
2. Symphysis falls towards injured side.
3. Head of Condyle remains in articular cavity.
4. Very slight crepitus owing to the great mobility of the upper portion.
5. No very alarming symptoms.
6. No hemorrhage.
7. Fracture may be felt.

COMPLICATED FRACTURE.

(Dislocation and Fracture).

1. Glenoid cavity empty.
2. Condyle is in front of the Emenentia Atricularis.
3. Symphisis drawn towards side of injury.

FRACTURE OF CORONOID PROCESS.

Rare, and the result of direct violence. It is protected by the various muscles and the Zigomatic Arch. No crepitus.

1. The intervals between the fragments may be felt inside the mouth.
2. Loss of strength in the jaw.
3. Pain in using the jaw.
4. Not much disturbance in the jaw articulation, mobility being normal.
5. History of the violence.

TREATMENT.

Following a fracture is an effusion of blood and inflam. products which cause swelling of the part. This is great about the face owing to the large quantity of cellular tissue there. It is always desirable to set the bone before this takes place; but if the swelling has already taken place it is desirable to wait a few days until the swelling has subsided. In treatment two objects must be kept in view; viz.:--

1. To replace the fragments.
2. To provide means for feeding.

If there are teeth in each jaw so that an accurate articulation may be obtained; and, if, in addition, one or more teeth are absent to admit a feeding tube, or if there is sufficient space between the posterior teeth and the ramus to admit a tube, the simplest method is to articulate the teeth properly and then bind the jaw in position. It is best held in position by large pieces of adhesive plaster either running upward, or else from the angle of the jaw upward and forward to counteract the tendency of the jaw to fall backward. If the patient cannot be fed in this way other methods may be employed:--

no

1. The fragments may be wired together.
2. An interdental splint may be used.

Wiring the parts together is applicable especially when the parts contain no teeth. Place the patient under an aesthetic; cut down to the bone; dissect away the soft tissue; drill either two or four holes through the fragments, and tie with silver wire by twisting the ends. The wire may be left permanently. Sutures, along with splints may be employed. If the jaw is fractured at the ramus through the attachment of a muscle the muscle will hold the parts in position. If the Coronoid process is fractured the edges cannot be brought together and all that can be done is to fix the jaw and allow the space to fill by fibrous union. If the Condyle is fractured the teeth must be articulated and the jaw bound in place by plasters. Have these running from the angle forward, and if necessary a tightly fastened cap may be worn with a projecting beak to which the plasters may be attached. The mouth should be kept clean with a solution of soda or boracic acid. The plasters may be left for 3 or 4 weeks.

PROCESS OF HEALING OF FRACTURE.

This is similar to healing in soft tissue. Inflammation is set up and the accumulation of infl. products causes swelling. The ends of the bone become softened and lose their calcareous material

Between the ends of the bone are found:--

1. Leucocytes.
2. Fixed tissue cells.
3. Bone corpuscles.
4. Cells due to multiplication.
5. Fluid.

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4. Cells due to multiplication.
5. Fluid.

The organization appears to take place just at the outside and forms a callous which becomes transformed to bone. The same process goes on a little later internally. If the ends of the bone are fixed there is very little callous formed. Of the cells found in the infl. products, some, when organization takes place, become fixed cells and form bone, while the rest disappear. The bone on the outside formed from the callous becomes gradually absorbed or "modeled down".

INTER-DENTAL SPLINTS.

These may be fixed or movable.

FIXED SPLINTS.

Take an impression of the upper jaw and make a model. Then take an impression of the fragments and make a model. Apply these to the upper model. Trim until they will go to place and then cement together with plaster. Place the models on the articulator and open so as to allow space to feed through. To represent the downward and forward movement of the jaws trim off the model behind about 1/12 of an inch and slide forward 1/6 of an inch. Make a splint of wax and then of rubber. Drill a hole through it for feeding; place in position, and then bind the lower jaw in place.

MOVABLE SPLINTS.

A movable interdental splint has cavities below for the teeth but is smooth above. To this is fixed a wire with the ends projecting outward and the jaw is kept in place by an elastic band passing outward and beneath the chin from one wire to the other. This keeps the parts in place and yet allows of movement.

FRACTURE OF SUP. MAX.

These are nearly always compound and are the result of very great direct violence. They are easy of diagnosis.

1. History of violence.
2. Imperfect articulation.
3. Hemorrhage from mouth.
4. Mobility of fragment.

TREATMENT.

Replace the fragments, after which healing will take place.

DISLOCATIONS.

A Dislocation is a displacement taking place in a joint.

They are SIMPLE when there is no opening from the seat of the injury to the surface. They are COMPOUND when there is such an opening, and COMPLICATED when accompanied by fracture.

The soft parts connected with the joints are:--

Inter-articular Fibro-Cartilage.
Two Synovial Membranes.
External Lateral Ligaments.
Internal.
Capsular.

A dislocation may be Unilateral or Bilateral.

PREDISPOSING CAUSES.

1. Anatomical formation. (Glen. Cav. shallow and E.A. low).
2. Loss of tenicity of muscles.
3. Previous dislocations.
4. General debility in Muscles and Ligaments.
5. Mouth being open.

DETERMINING CAUSES.

1. Downward blow upon the chin causes bilateral dislocation.
2. Lateral blow upon the chin.
3. Downward pressure in extraction without support.
4. Yawning or laughing.
5. Muscular action.
6. Tumors in the Glenoid Cavity forcing the Condyle out of place
7. Placing something too large in mouth.
8. Infl. products forcing jaw out of place.

APPEARANCE OF LUXATION.

Impartial dislocation the Condyle slips forward so as to rest upon the Eminentia Articularis from which is may easily be shoved back to place.

CONDITIONS OF DISLOCATION.

1. The Condyle is in front of the E.A.
2. The Temporal muscle is greatly stretched holding the Condyle in its new position.
3. The Inter-Art. Fibro-Cartilage comes forward comes forward with the Condyle.
4. Infl. is set up about the Condyle and Glenoid Cavity.
5. The Capsular Ligament is stretched or ruptured.

SYMPTOMS OF BI- LATERAL DISLOCATION.

1. Two depressions behind the cavity of hearing into which the finger may be inserted.
2. Mouth open and jaw fixed.
3. Lower teeth more forward than usual.
4. Usually great pain.
5. Seldom hemorrhage unless it is a compound fracture. Dislocat
6. Symphisis in median line.
7. Great anxiety of patient.
8. Saliva flows fleely.
9. Mastication impossible and speech interfered with.
10. Coronoid processes may be felt beneath molar bones.
11. Jaw is difficult to replace but once replaced it remains in position.
12. Condyle may be felt in its new position.

UNILATERAL DISLOCATION.

The general symptoms are the same with the exceptions that the depression and Condyle can be felt onmone side only and the symphisis is drawn away from the side of the injury.

DIFFERENCE BETWEEN DISLOCATION AND FRACTURE OF LOWER JAW.

FRACTURE	DISLOCATION.
1. Bone is immovable.	1. Bone is fixed.
2. If replaced will not stay.	2. If replaced remains.
3. Mouth can be closed.	3. Mouth cannot be closed.
4. Glenoid filled.	4. Glenoid cavity empty.
5. Symphisis towards injury.	5. Symphisis from injury.
6. Line of fracture can be felt.	6. No line of fracture.
7. Crepitus may be heard.	7. No crepitus.
8. Bleeding into mouth.	8. Seldom bleeding.
9. Parts easily replaced.	9. Parts difficult to replace.

HISTORY OF DISLOCATION.

Dislocation of the Inf. Max. may be followed by infl. and an effusion of inlf. products into the parts. The swelling caused by this subsides in about a week, after which these inflammatory products begin to organize. If not reduced all the displaced parts have a tendency to become fixed and adapted to their abnormal condition. Motion slowly returns to the parts. The posterior teeth, which first articulate under these new conditions, are either worn off or forced into the jaw so that a tolerable adaptation of the teeth is obtained. A new joint cavity is formed in front of the E.A. and the old one becomes filled up. It is doubtful whether it is advisable to attempt a reduction after six months, and it should never be attempted after a year.

METHODS OF REDUCTION:--

1. The simplest method is to place the thumbs upon the molar teeth with the fingers beneath the chin. Downward pressure is then made upon the molar teeth and upward upon the chin, allowing the Condyle to slip past the E A. and be drawn to place by the Temporal Muscle. The thumb must be withdrawn as soon as the jaw begins to move.
2. A piece of cork may be placed between the posterior teeth and upward pressure applied to the chin.
3. A stick of wood, a foot long and 1/2 an inch thick may be used as a lever. The ends may be placed upon the molars and the upper bicuspids of the opposite side used as a lever or the end may be placed against the upper molars of the opposite side and downward pressure applied to the teeth of the other side.

In reducing with the thumbs the patient should endeavor to relax the muscles. When it cannot be reduced by the thumbs place the patient under an anaesthetic.

1. To relieve pain.
2. To relax the muscles.

After reduction keep the parts in place by a four-tailed bandage. It should be tight enough to prevent dislocation and yet allow of motion and should be left six weeks longer. If the dislocation is compound the wound should be closed and sealed surgically. The edges may be stitched and sealed with a pad of lint and collodion. Usually it will heal promptly. If it heal slowly Anachylosis may result from the organization of the products. Sometimes this can be broken up by placing the patient under an Anaesthetic and wedging apart. If this fails the neck of the condyle may be sawn across and motion be kept up so that a false point is established.

TUMORS.

A tumor is a more or less circumscribed growth growing independently of the other tissues of the body. It has no function. It is not the result of inflammation, nor the result of hypertrophy A tumor is sometimes called Neoplasm or new growth. All tumors grow as the result of an inherent vitality distinct from the general vitality of the tissues. They disobey the general law governing the development of tissues in several ways.

2

In the Dictionary
where [illegible]
there is a notation
which [illegible]
[illegible]
[illegible]

1. They grow without an object and have no function.
2. They thrive and grow while the other tissues are wasting away.
3. They have a very obscure cause.
4. They have no definite size but grow indefinitely.
5. They originate from other tissues and have a sort of parasitic growth.

Tumors are divided into two classes:--Malignant and Non-Malignant. They differ from each in the following:--

1. Malignant tumora are infectious and may attack other parts of the body. If removed others may grow or originate near by or some distance away.
2. They grow [illegible] rapidly than the non-malignant variety.
3. They undisturbed ~~they~~ lead to death.
4. Histologically the elements of which they are composed resemble embryonal elements of the body, being imperfectly developed.

Those tumors in which the elements are most embryonal are most malignant and vice versa.

CAUSES.

The causes are obscure. The chief are:--

1. Hereditary disposition. (Certain types of skin, &c., seem disposed to tumors). This is true of the non-malignant variety.
2. Irritation caused by:--
    (a) Misfitting dentures.
    (b) Clay pipes.
    (c) Sharp edges of teeth.
3. Use of tobacco.
4. Abrasion of the lips.

MALIGNANT TUMORS.

They are divided into two great classes:--

1. Epithelial tumors, cancer or Carcenoma.
2. Connective tissues are sarcoma.

Cancers may be divided into:--

1. Epithelioma--incident Rodent ulcers.
2. Scirrhus.
3. Encephaloid or Medullary.

EPITHELIOMA.

This is that variety of Carcenoma which grows from the superficial epithelium either of the integument or the alimentary canal. It is the variety found about the mouth and is very apt to attack the lips. It is like other varieties of cancers and is usually found on persons above middle age. 40-45

CAUSE.

Always an irritation of some kind.

There are two kinds of Epithelioma:--

1. Epithelioma proper.
2. Rodent ulcer.

Both are called flat or cutaneous cancers because they do not project but grow laterally and in depth.

CHARACTERS OF EPITHELIOMA.

It first appears as a little hardened nodule and when on the lip is in connection with an abrasion or a fissure crack. This has no tendency to heal. It is not sensitive but rests on a dense tissue, structure or base. The tumor consists of an abnormal downward growth of epithelium, resembling fingers which will penetrate any tissue. As epithelium is not vascular the cells at the centre of the nodule (cell nest) die from starvation and constitute an ulcer. This ulcer rapidly increases in size and depth and follows rapidly upon the growth of epithelial tissue. It has no secretion except a watery fluid, and has no tendency to scab. If squeezed, small wormlike bodies can be forced out of the ulcer. When the ulcer occurs on the tongue or mucous membrane the moisture irritates it and causes it to be more painful, and to develop more rapidly. The development of epithelioma is rather slow and may continue from 1/2 to 6 years. As a rule the patient will die in 2 or 3 years. When the finger growths reach a lymphatic vessel a germ may be conveyed to the nearest lymphatic gland and infect it so as to form a "daughter tumor". This second growth is more malignant and grows faster than the first. It may infect the next gland nearest the centre forming a grand-daughter tumor". If the original is on the median line on the lip the gland will be on the median line on the (under) the chin, but to one side. The affected gland will be at one side and if the tumor is on the tongue the gland will be most likely deeply situated beneath the angle of the jaw. In examining these glands place one finger within and one without the mouth.

DIAGNOSIS OF EPITHELIOMA.

The only ulcer which resembles it is the primary chancre of syphilis. The distinctions are:--

1. A chancre will scab over and a tumor will not.
2. The base of a chancre is larger and denser.

70

[illegible]

[illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible]

[illegible]

[illegible] ([illegible])

3. A chancre affects several glands immediately. A cancer affects them only after some time and one by one.
4. A chancre runs a definite course and a cancer does not.
5. A chancre is followed by a sore throat and other symptoms of Syphilis in about 40 days.

TREATMENT OF EPITHELIOMA.

Early and complete removal including the gland if affected.

RODENT ULCER.

These are the least malignant of the epithelial cancers. Their growth is very slow and may extend over 30 or 40 years, so that they do not cause death. They attack cutaneous surface only and do not affect the m.m. It has the appearance of a small ulcerated spot which has no tendency to heal. Their general growth is similar to epithelioma but is more superficial. They do not give off pus but a thin fluid with a disagreeable odor. They may exist for years without affecting the lympathic and hence are very susceptible to treatment. In structure a Rodent Ulcer differs from an epithelioma in the cells being smaller and resembling the root sheaths of outer wall of a hair follicle. They are difficult to distinguish from other forms when beginning but their locality--usually the upper part of the face--will assist in the diagnosis. Later on their slow growth will serve as a diagnosis.

TREATMENT.

Excision. This is the variety in which plasters are most effectual. These plasters are composed of a paste either of Arsenious Acid or Chloride of Zinc.--R. Wheat flour 1 dr. As_2O_3 20 grs. $Zncl_2$ 1/2 dr. water to make a paste. – $agno_3$ – [illegible], [illegible]

SCIRRHUS CANCER.

These always grow from glandular epithelium such as is found in the female breasts and salivary glands . It grows rapidly and usually causes death within 11/2 years. A softening or ulceration proceeds from within outwards, and when it bursts through the surface forming an ulcer, giving off a very disagreeable odor it causes a general depression of vitality very rapidly and is painful at night. It grows in every direction regardless of the tissues and soon inoculates the lymphatics forming a second ulcer more malignant than the first. It is very hard and dense, and is composed of layers of fibres of connective tissues between which are spaces filled with cuboidal glandular epithelial cells having no functions The greater the connective tissue the greater is their growth is their growth. A tumor of this kind growing in the submax. gland might be mistaken for Chronic Abscess. The diagnosis is:--

1. The tumor if outside of the bone and is movable upon it.
2. Condition of the teeth.
3. Manipulation between the fingers--one outside and one inside the mouth.
4. An abscess has a softening at the centre. A tumor may have one just before bursting.
5. If accidentally opened a tumor gives off bloody matter instead of pus.
6. If a tumor has formed or burst through the skin it has no tendency to heal.

This variety is often found in the Antrum. It is then characterized by:--

1. Expansion of the walls in every direction.
2. Excessive pain.
3. Separation of the teeth.

ENCEPHALOID OR MEDULLARY CANCER.

This is a soft variety between which and the Scirrhus there is no sharp line of difference. It is the most malignant variety of Carcenoma and is most usually found in young patients. It also grows from a gland tissue and the softer it is the greater is its malignancy. It grows very rapidly and reaches an enormous size, the patient usually dying within a year. In structure it is composed of glandular epithelial cells with very little connective tissue. The lymphatic glands are infected early and operations are not justifiable as the patient is DOOMED.

SARCOMA OR SARCOMATOUS TUMORS.

Sarcoma are divided according to the cells of which they are formed; viz.:--

1. Spindled celled.
2. Small round celled.
3. Large round celled.

SPINDLED CELLED.

In this tumor the composition consists of long spindled cells with an elongated nucleus. This variety has no particular locality but often attacks the periosteum of bone. As it is a rather highly developed variety it does not grow rapidly and may exist for years as a nodule without undergoing any change. Suddenly, however, it may begin to give way rapidly. It does not break down early, and is always at first surrounded by a capsule. This, as

Tumor

malignant { 1 cancer or carcinoma { [illegible]
2 scirrhus
3 [illegible]

2 [illegible] & sarcoma

[illegible]

well as the other variety of Sarcomatous tumors, does not inoculate the lymphatics, but the cells find their way into the blood, and thus inoculate other tissues. This constitutes one of the differences between Sarcoma and Carcenoma. As these cells, after getting into the blood current, do not encounter any capillary vessels until they reach the lungs that is the part where secondary tumors are first formed. These secondary tumors grow more rapidly than the first. From them other parts of the system may be inoculated. On account of the shape of the cells, however, they do not readily enter the blood, and so this variety is not very malignant.

Sarcolema sometimes originates in the lymphatic glands. They then constitute Bodskin's Disease.

LARGE ROUND CELLED SARCOMA and SMALL ROUND CELLED SARCOMA.

These have similar symptoms and growth, and may be described together. They are the most malignant of all tumors and may grow to an immense size in a few months. They are soft and have a well-defined outline. They are infectious through the blood. Operations are seldom of use.

DIAGNOSIS IN LOWER JAW.

1. Does not affect lymphatics.
2. Teeth separate and become loose.
3. Mastication and speech are interfered with.
4. Pain in the part, particularly at night.

Osteo-Sarcoma is a variety found in connection with bone. It frequently occurs in connection with the Inf. Max. In this variety spicula of bone grow outward with a tumor in every direction. The bone is expanded in all directions and causes great deformity.

DIAGNOSIS.

Osteo-Sarcoma is distinguished from Abscess or Cyst by:--

1. Teeth are separated and become loose.
2. Pain particularly at night.
3. Tumor hard and slightly elastic.
4. Tumor does not fluctuate like an abscess.
5. Parts of the tumor degenerate and form small cysts which are filled with a fluid.

NON-MALIGNANT TUMORS.

These are named according to their anatomical elements; as,--

Osteoma resembling Bone.
Chondroma " Cartilage Lipoma
Myoma " Muscle Adenoma.

DIFFERENCES BETWEEN SARCOMA AND CARCENOMA:--

1. Epithelioma grow from epithelioma structures:
   Sarcoma from connective tissue.
2. Epithelioma infect lymphatics:
   Sarcoma infect the lungs through the blood.

FIBROMA.

These may grow from the gumbs, periosteum of alveolus, peridental membrane or submucous tissue. They seem to be due to irritation. Another name for them is Epulis. It is a fungus growth which forms slowly, and if from the socket of a tooth it separates it from the adjacent ones. It is firm and slightly elastic, usually pale and not painful. It mechanically interferes with the functions only. It usually grows from a constricted base or pedicle. If irritated by the opposite teeth it becomes inflamed and highly vascular. It may be caused by the irritation of the teeth or a plate, but its origin is often obscure. In structure it is composed of white fibrous connective tissue. Its growth continues until removed.

TREATMENT.

COMPLETE EXCISION.--There is not usually much hemorrhage and it can be controlled by Actual Cautery or by Perchloride of Iron. If from the socket of a tooth, remove both tooth and socket. If any vestige is left it will return.

OSTEOMA or EXOSTOSIS ON THE FACE.

We have two varieties corresponding to the two varieties of tissue.

1. Compact Osteoma or Exostosis.
2. Cancellous " "

An exostosis may be pedunculated--when attached by a narrow neck or pedicle.

Sessile--when attacked by a broad base.

An Osteoma is the slowest in growth of all the tumors of bone. It does not cause pain unless it encroaches upon nerves when it may cause neuralgic pains. It should not be interfered with unless there is great deformity.

TREATMENT.

Dissect away the soft tissues and drill around the neck of the base with a dental engine, and loosen in that way.

Sr

ANGIOMA.

This is a morbid growth connected with blood vessels. It is the cause of mother marks, etc. To prevent deformity they should be removed in infancy by the use of escharotics, such as 10% paste of Bi-chloride of Mercury.

DIFFERENT VARIETIES OF ULCERS.

Apthous
Thrush
Membraneous
Gangrenous
Cancrumoris
Phagedenic
Calloused
Tuberculosis
Syphilitic
Irritable
Varicose

CYSTOMA OR CYSTIC TUMORS.

They may be divided into two classes:--

1. Those developed from a cavity already existing--~~Ranula~~.
2. Those which form new cavities. mucoid cyst

A Ranula is caused by the closure of the duct of the gland as a result of some interference. The floor of the mouth is a favorite position. The opening of the duct being closed fluid collects and acts as an irritant which causes more fluid to collect and form the cyst. A cyst is a membraneous sac in which matters are collected. The contents may be either fluid or solid. They usually resemble the white of an egg.

DIAGNOSIS OF RANULA:--

1. Not painful unless irritated.
2. May interfere mechanically with movements of tongue or jaw.
3. Do not ulcerate unless irritated.
4. The membrane covering is translucent so that the blood vessels may be seen.
5. Elastic and gives fluctuating motion on pressure.
6. Its growth is slow and constant.

TREATMENT OF RANULA.

Cut the Ranula open and then allow the contents to escape. Then cauterize slightly with Iodine or some other caustic.

thoroughly [illegible]

SEBACEOUS CYSTS.

A Sebaceous Cyst or Wen grows in connection with the hair follicles, and is usually found on the head but is sometimes found on the face. Each consists of a movable nodule beneath the superficial tissue.

TREATMENT.

Cut through the skin and tumor, and pull out the cotents. It is easily done and the Wen will not return. without leaving remnant

DENTIGINOUS CYSTS.

These are found in the Alveolar process and contain a suppressed or supernumerary tooth. Each consists of a single cavity containing the tooth surrounded by a viscid fluid. They are not painful but cause a protuberance.

SYMPTOMS OF CYSTS.

1. Deformity caused by projection of bone.
2. A permanent tooth likely absent from the arch.
3. If from the supernumerary it will likely be outside or inside the normal arch.
4. The bony wall becomes elastic.
5. Little or no pain.
6. Progresses slowly.

DIAGNOSIS OF CYSTS.

1. Slowness of progress.
2. Absence of a permanent tooth.
3. Elasticity of the bony wall.
4. A hollow needle inserted brings out a clear, viscid fluid.

TREATMENT OF DENTIGINOUS CYSTS.

1. Dissect away the soft tissues.
2. Cut through the superficial wall.
3. Remove the contents.
4. Replace the soft parts.

CYSTS OF THE ANTRUM.

These may be caused by:--

1. Closeness of the ducts of the nose, and accumulation of secretions.
2. Cyst in connection with the mucous follicles of the m.m. A cyst in the Antrum expands the walls, particularly the anterior one. The walls may become softened and elastic There is not much pain but a sensation of weight is felt on the affected side.

DIAGNOSIS.

Absence of positive symptoms of pus. It is difficult to distinguish between an abscess and a cyst. An abscess, however, is generally more painful on account of the irritation of the pus. The most certain diagnosis is to perforate the anterior wall with a hollow needle. If pus is brought an abscess is indicated: if a clear, viscid fluid, a cyst.

TREATMENT.

Make a free opening and syringe out the cavity. If there is an opening into the nose, it may be allowed to heal: if not, one must be made, or a plate and silver canula worn.

ANEURISM.

An Aneurism is the local dilatation of one or all of the coats of a blood vessel. The causes are:--

1. Partial wound of the vessel wall.
2. Disease of tissue surrounding the vessel.
3. Disease of the vessel wall itself.

These act by making the walls of the vesses weaken so that they cannot resist the tension from within.

SYMPTOMS OF ANEURISM.

1. Enlargement.
2. Pulsation from the centre of enlargement in every direction.

TREATMENT OF ANEURISM.

Tie the vessel on the side next the heart.

HARE-LIP and CLEFT PALATE.

These are usually associated although they may exist separate. Hare-lip may be single or double. Cleft Palate is always single behind but may be double in front. The structures of the lip are developed in one central and two lateral portions, and union may fail to take place in one or both sides. The suture of the palate is single from behind forward, until it reaches the intermaxillary suture. Cleft Palate usually extends out in one direction in front, but may be double, in which case the Intermaxillary bone may be held in place by the Nasal Septum and soft tissues.

Cleft Palate is caused by an imperfect union of the lateral halves of the bones of the face. It usually extends from behind forwards. All degrees are found, from a slight cleft in the Uvula to an opening extending forward to the intermaxillary suture and even following one or both sutures forwards to the lateral tooth. The Vomer is usually attached to one or the other side. It may be free. The opening is usually into one side of the nose. It is usually accompanied by a high arch palate.

There are three kinds of treatment:--

1. By surgical operation.
2. Mechanical appliance.
3. By combination of both.

The operation should be performed as young as possible and only when the fissure is narrow and the arch is high.

The stages in the operation are:--

1. Administer Chloroform.
2. Place a gag in the patient's mouth and depress the tongue.
3. Seize the side of the fissure with a pair of mouse tooth forceps and place upon the stretch.
4. Freshen up the edges with a sharp knife.
5. A threaded needle is passed into the soft palate from before backwards and the needle is drawn into the cleft and the needle slipped off. A single thread is passed through the other side and the end drawn through by means of the loop. The ends are then tied and if a wire is used they are twisted. Two or three stitches are necessary.
6. If the cleft extends forward and the arch is high and the fissure narrow the soft tissues are dissected away from the edges of the cleft and brought together and fastened with sutures. In young patients the empty space will become filled in with bone and become hard. After this operation the patient should be placed in bed, fed on liquid food, the mouth kept closed, the temperature kept at 70, and draughts avoided. After five days the mouth can be opened and the stitches removed, if no healing is taking place, but the parts are sloughing, the sutures may be removed and the wound left alone as nothing further can be done.

HARE LIP.

This is a congenital deformity resulting from imperfect union of the parts of the face or lip. It is never found in a median line but a little to one side corresponding to intermaxillary suture. It may be single or double. The intermaxillary may be so rudimentary as to consist merely of a nodule of bone, and if so is generally displaced forwards, sometimes attached to the lip of the nose forming a sort of snout.

TREATMENT OF HARE LIP.

Place the patient under an anaesthetic. Freshen the edges of the fissure with a sharp knife cutting from above downwards to the margin of the lip. The paring should include the whole thickness of the lip and a flap should be cut off one side and be attached to the lower margin of the other side of the fissure. Or two slips may be cut loose and allowed to heal together below to form a little nodule. In the case of a double hare lip freshen the nodule and both sides of the tissue of the fissure. Bring the parts together. The parts are held together by a hare lip pin and the figure of 8 suture. This may be strengthened by stitches. The head and point of the pin are protected by a little cotton. Plasters fitting into each other may also be used. The pin may be removed in 48 hours. The rest should be left for 3 or 4 days or even longer. The operation should be performed when the child is about six weeks old.

SYPHILIS.

This venereal disease resulting by inoculation by a specific Spore. It may be transmitted by heredity or direct inoculation. Inoculation may take place through an abrased surface or a healthy mucous membrane. From the time of inoculation until the first local symptoms appear is called the period of Inoculation and usually extends over about two weeks.

FIRST SYMPTOMS OR STAGE.

The primary lesion is known as the Hunterian chancre and occurs at the point of inoculation. It is sometimes about the mouth and frequently upon the lips from kissing It resembles a button being thickened, dense and hard with a red ulcerating surface. It possesses but little sensibility and remains superficial and obstinate. The discharge is small in amount, watery. and contains epithelial debris but no pus. If uninterfered with a chancre may exist from 3 to 6 months and then disappear.

SECOND SYMPTOMS OR STAGE.

About the time the local lesions disappear and symptoms of systemic poisoning appear. These begin as syphilitic fever accompanied by lassitude, loss of apetite, furring of the tongue, increased temperature and headache. This is followed by an eruption all over the body of blotches the size of a pea and resembling raw beef in color. This eruption continues for 2 or 3 months and then the blotches become scaly and disappear. At this stage an ulcer makes its appearance from each tinsil. It is kidney shaped and is covered with a grey adherent slough.

It does not eat into the tonsil and may continue for a long time. About this time lymph glands, in various parts of the body, become hardened and enlarged. Milky patches appear upon the tongue and inside of the cheeks. Towards the close of the second period these patches become raised and give off a virulent fluid. The hair may fall out but grows in again. After a time these symptoms entirely disappear and a variable period may elapse before the third stage appears.

THIRD SYMPTOMS OR STAGE.

These are generally found in the deeper tissues such as bones, muscles and the nervous system. This stage is characterized by local infl. in various parts, hard and soft. Gumnatous tumors form in various parts and break down to form abscesses. They progress very slowly and form deep ulcers. When in the tongue they may be felt between the fingers. These ulcers may be distinguished from epithelioma by:--

1. Beginning within the tissue.
2. Yielding to treatment of K. I.

From scirrhus cancer by:--

1. Being smaller, slower in progress and softer.
2. Amenable to treatment.

From Sarcoma of all kinds:--

1. By the slowness of its growth.
2. By being soft at the centre.
3. By having no outgrowth.
4. By its well defined margin.

The facial glands are attacked and destroyed. Necrosis of bone is set up. The soft and hard palate are eaten through. The nasal bones are destroyed. The floor of the cranium is perforated and death results. Paralysis of various parts may precede this.

TREATMENT.

1st and 2nd stages----Mercurial Treatment.
3rd stage----Iodide of Potash.

The leisons of Syph., which show themselves in the mouth or associate parts, are:--

1. Primary chancre.
2. Ulceration of the toncils and soft palate.
3. Milky patches on tongue and inside of cheek.
4. Raised sores at the corner of the mouth.
5. Infl. of bones of either jaw leading to abscesses and necrosis.
6. Nodular growths in the tongue breaking down to form deep ulcers.

Syphilis is very curable in its early stages.

HEREDITARY SYPHILIS.

A child may be born healthy but the lessions appear in a few weeks. Eruptions with ulcers appear at the corners of the mouth. These may heal and leave a puckering which is diagnostic. Affectation of the M.M. are apt to follow. The temporary teeth show no lesion but the central incisors and the laterals are peg-shaped and known as "Hutchinson's Teeth".

SYMPTOMS OF HEREDITARY SYPHILIS.

1. Scar at the corners of the mouth.
2 Hutchinson's teeth.
3. Scar upon the eye.

It is sometimes hard to distinguish between Syphilitic Psoriasisis and Epithelioma.

1. If the glands are affected at some distance away Syphilis is indicated.
2. If near Epithelioma.
3. If there is an outgrowth which destroys the tissues it is Epithelioma.
4. If it is amenable to treatment it is Syphilis.

SCROFULA AND TUBERCULOSIS.

A Strumous diathesis is that peculiar condition of the system attended by great susceptibility to infl. amma action going on to suppuration. A Scrofulous condition may be inherited or acquired by living under unhealthy conditions. In these conditions there is a tendency towards the suppuration and breaking down of the tissues The lymphatic glands of children are most likely to be affected. They become enlarged and terminate in abscesses. They may undergo a cheesy degeneration, and remain large and hard for the rest of life. If the glands suppurate and form abscesses they may heal and leave scars which are persistent. The health of the individual may subsequently be good. While the scrofulous condition acts as a strong predisposing cause the suppuration of the glands of the neck may be caused by inflam. conditions of the scalp,ear,teeth, nose, &c., as well as by eruptive diseases.

DIAGNOSIS.

Abscesses of the lymphatic glands may be distinguished from Alveolar Abscesses:--

1. In glands the abscess originates in the soft tissues and is movable.
2. In Alveolar abscesses it is within the bone and is immovable.
3. By the condition of the teeth.

3. In lymphatic abscesses several glands in different stages of degeneration may be found.

TREATMENT OF LYMPHATIC ABSCESSES.

1. Remove all causes of irritation.
2. Improve general condition of system. (Pure air, &c.).
3. Give tonics. (Cod liver oil, Iron, &c.).
4. If abscesses are formed lance and wash out.
5. If glangs are hard and become obstinate, indicating cheesy degeneration, remove.

RHEUMATISM.

This attacks joints as well as the sheaths of muscles. It may be felt in the Masseter muscle and in the Temporo-Max. joint. In these cases it may be distinguished from other lesions by:--

1. History of exposure.
2. Predisposition.
3. Absence of infl. swelling.
4. Pain confined to the part. (Muscle or joint).
5. Pain increased by motion of jaw. This distinguishes it from Neuralgia.

TREATMENT.

1. Hot fomentations of the part.
2. Salts of Potash given internally.

NEURALGIA.

Neuralgia is a nervous disease indicated by a pain in the nerve.

Predisposing causes:--

1. Low vitality as is Scrofula, Syphilis, Malaria .
2. A susceptible constitution. Hyperaesthesia.
3. Use of opium.

Exciting causes:--

1. Scrofula, Syphilis, and Malaria.
2. Diseased teeth.
3. Inflammation of the Schniderian Membrane.
4. Pressure upon nerves. Exostosis, Tumor.
5. Inflammation of the sheath of nerve.
6. Diseases of the eye and ear.
7. Misfitting dentures.
8. Limitation of the adjacent nerves.
9. Obscure causes, such as the condition of the blood.

CHARACTERISTICS.

1. The pain is darting: a flash of pain is followed by an interval of rest.
2. It follows the course of the nerve attacked.
3. Pain is felt in the region of the distribution of the affected nerve.
4. Presents tender joints along the line of the nerve where it passes through bony foramina, dense fascia, or enters a muscle. This is very chara teristic of neuralgia, and distinguishes it from all inflam. pains. The foramina most apt to be affected are:-- Supra-Orbital, Infra-Orbital, Inf. Max., Mental, Nasal and Malar. It usually attacks middle aged people; never children or old people.

TREATMENT.

1. Remove the cause if possible.
2. Give Bromide of Potash which lessens the irritation and quiets the nerves. Never use Opium as it increases the irritability.

ANAESTHETICS.

Anaesthetics of all kinds are contra indicated:--

1. In infancy or old age--particularly the latter.
2. To persons addicted to the use of stimulants.
3. To persons subject to weakness of the heart.
4. In consumption or entensive diseases of the lungs.
5. In diseases of the brain--Epilepsy, Paralysis, &c.
6. In diseases of the kidneys.
7. In pregnancy.

In infancy care is necessary in regard to the amount given.

TO TEST THE ACTION OF THE HEART.

1. Place two fingers on the pulse at the wrist and see how much pressure of the first will stop it at the second.
2. Observe the difference between the force of the pulse in the hand when resting at the side and when raised above the head. It should not differ much.
3. If the pulse differs more than 10 beats to the minute in the erect and recumbent position the heart is weak.
4. A murmur heard at the apex of the heart indicates disease of the auriculo-ventricular valves.
5. A murmur heard at the base of the heart to the right of the eterum in the second intercostal space indicates disease of the semi-lunar valves.

In any case where an anaesthetic is at all contra-indicated shift the responsibility upon a physician.

In administering CHLOROFORM.

1. Have everything in readiness.
2. Give it upon an empty stomach. [illegible]
3. Have remidies, as Liquor, Ammonia and Ether, at hand in case of any alarming symptoms.
4. Have the dress loose about the neck and thorax.
5. Have patient in recumbent position.
6. Use pure D. and F's ChCl3 and Squibb's Ether.
7. Have third party present.
8 Administer with an napkin.
9. As only 3 to 5% can be breathed with impunity place it upon the napkin drop by drop.
10. Give it very slowly until tolerance has been established.
11. Give it rapidly during the excited stage.
12. Cease when stentorian breathing comes on and the cornea loses sensibility.

[illegible]

SENSATIONS PRODUCED.

1. Resistance.
2. Dreamy, drowsy condition of comfort.
3. Sounds in the ears; dulness of vision and gradulloss of consciousness.
4. Period of excitement, in which the pulse is full and strong.
5. Profound anaesthia.

Lividity of the face and spasms of the larynx are not alarming symptoms.

SYMPTOMS OF DEATH.

1. Cesation of respiration.
2. Imperceptible pulse.
3. Eyeballs turned up.
4. Relaxation of the sphincters.

During the administration, when a spasm of the muscles comes on, stop the administration for a while. If, after this period, respiration ceases, stop giving the ChCl3 and restore the patient. Restoration is also indicated if the pulse becomes imperceptible. If vomiting occurs clear the mouth and continue.

RESTORATION OF THE PATIENT.

1. Place the patient in a horizontal position to lessen the work of the heart.
2. Draw the tongue forward with the fingers and a napkin.

[illegible] 32 2 – [illegible]
[illegible] 41 1ʒ a 1ʒ

Vomiting may be [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] they cannot [illegible] must [illegible]
any degree of emaciation. beyond [illegible] [illegible] [illegible]

a little [illegible] ammon. carb. [illegible] stimulating.

(a) So that it may not close the glottis.
(b) Act of drawing it out excites respiratory centre.
3. Stimulate the respiratory action by artificial repiration

SYLVESTOR'S METHOD.

Stand above the patient; draw the arms up, repeating about 16 times per minute. Continue formabout 1/2 to 1 hour until natural respiration begins.

Allow patient to inhale vapor of Ammonia.

Sulph. [illegible] Ether may be injected into the arm to stimulate the circulation. 1/60 gr. Strych. better [illegible]

ETHER

Ether should be confined and should be given as rapidly as possible. It cannot be used at night as it forms an explosive compound with air. In giving it commence slowly to establish toleration and then give as rapidly as possible. The excited stage is apt to be prolonged. Death usually results from failure of respiration.

ADVANTAGES OF CHLOROFORM.

1. Patient takes it better. It is less ittitating.
2. It requires a smaller amount.
3 Period of excitement is short.
4. Anaesthesia is very profound.

ADVANTAGES OF ETHER.

1. Smaller proportions of death.
2. Death results from failure of respiration.

Ether should be used in the cases of elderly patients or when there is weakness of the heart, but never when there is a weakness of the lungs or kidneys.

NITROUS OXIDE.

Nitrous Oxide must be given to the exclusion of air. It is readily tolerated. The same stages are gone through in the administration of $ChCl_3$ and Ether but more rapidly. Anaesthesia is partly due to asphyxia and partly to the action of the N_2O on the nerve centres. If mixed with the air it will intoxicate. Should not be repeated more than the third time.

ADVANTAGES OF NITROUS OXIDE.

1. Saving of time.
2. Toleration.
3. Very small percentage of deaths.

DISADVANTAGES:--

1. Anaesthesia is not prolonged.
2. Cannot be used in operations of the mouth.
   A few drops of ChCl3 make is dangerous.

LOCAL ANAESTHIA.

Cold is a local anaesthia and may be produced by ice or a mixture of ice and salt. It may be used in opening an abscess or in cutting through an integument or gum. Cold may alos produced by the ether spray in which it is rendered latent. The surface becomes and the surface paralyzed from cold.

Tr. of Aconite.

Strong Tr. of Aconite applied to the gum over the roots of the tooth will produce anaesthesia. It may be applied by dipping two wads of cotton in the Aconite, squeezing out the excess and placing them on the sides of the tooth to be extracted. Let them remain 5 to 15 minutes.

COCAINE.

A 4 to 5% solution is strong if pure, but it is sometimes necessary to use a 10%. It may be applied similarly to Aconite, or 5 or 6 drops of the 10% solution may be injected into the gums, a drop or two at each point. It is less disagreeable than Aconite and more powerful. Either may obtund pain in the gums from forcing up the forceps and from the severance of the peridental membrane but does not affect the nerve of the tooth.

APPEARANCE OF TONGUE.

1. May indicate Tonicity of Muscular System.
2. Condition of the nervous system. Will be turned to one side if there is paralysis of that side.
3. Condition of the alimentary canal.
4. If dry and chippy it indicates poisoning.
5. If very red--Dyspepsia.
6. The manner the coating leaves indicates the termination of the disease.

PARALYSIS OF FACIAL NERVE.

Caused by:--

1. Mechanical violence.
2. Exposure to cold.
3. Lesion of the brain.
4. The parts retain their sensation but the expression is lost on the side affected.

MICROSCOPY.

In the preparation of specimens they:--

1. Must be hardened.
2. Must be protected from putrefaction.

As soon as removed from the living body they must be placed in a hardening fluid which is at the same time antiseptic. Several fluids are used:--

1. Alcohol.
2. Muller's fluid, (Sol. Bichromate of Pot. & K_2sO).
3. Chromic Acid.

In any case the specimen is finally preserved in C_2H_6O.

ALCOGOL.

The tissue must be cut up into small pieces not more than 1/4 inch square to be placed in Alcohol, which has been diluted with half as much water and allowed to remain for 24 hours. It is then placed in pure Methylated Spirits.

MULLER'S FLUID.

This is the best to use for epithelial tissues. Is consists of 4% sol. of Bichromate of Potas. with the same amount of K_2SO_4. This gives a straw colored liquid into which the tissues are placed without washing. Large pieces of tissue may be used as,entire tissues. Change fluid every day for first week, then every week for a month, then every month for two months, then every two months for six months: It will then be hard enough. Remove it and place it in water for 24 hours changing the water several times. After this place is in dilute Alcohol, and in 24 hours in strong Alcohol, for final preservation.

CHROMIC ACID.

A 2% solution of this makes a straw colored liquid. Its action is rapid. But a few weeks immersion is necessary and then the tissue is finally placed in Alcohol.

PREPARATION OF A TOOTH.

Place the specimen in a 5% solution of H.C.I for a week using a large amount of fluid. At the end of that time try it with a razor and if it does not cut smoothly place it in fresh acid and leave it until it does cut. Then place in a Sol. Of Bich. of Potas. or dilute $C2H60$ until hardened; after which it may be preserved in $C2H60$. If the tooth was a fully developed specimen, it may be preserved in Alcohol without going through the hardening process, after it has been softened in HCl.

TO MAKE A SECTION.

Make a mixture of wax and sweet oil of about the same consistency when hard as the specimen. Soften this by heating in a cup. Place the tissue in it and cover over with the mixture. When cold cut down with a razor until the specimen is reached, using oil on the razor. A thin section can now be made, and is placed in Alcohol. Get rid of the wax and oil after it is ready for staining

MEDICINE AND SURGERY.

Examination Papers from 1890 to 1895.

March 1890. R. M. Fisher, M.D.

INTERMEDIATE.

1. What are the parts necessarily injured in fracture of bone? Give in general terms their treatment for non-union.
2. A large deep ulcer of the face has healed: how do the structures and vital properties of the cicatrix differ from the natural integument? What subsequent changes does it undergo?
3. Trace minutely the pathological condition in the whole of a part from the commencement of an abscess to the subsequent discharge on a free surface.

FINAL.

1. Give etiology, diagnosis and treatment of an abscess of the maxillary sinues.
2. What precautions would you observe in operative surgery to avoid suppuration and blood poisoning?
3. Give the treatment, local and constitutional, of a case of Acute Glossitis, Iodopathic and Traumatic.
4. Give etiology, Pathology and treatment of Necrosis occuring on either jaw.
5. Diagnose a dentigenous cyst, giving treatment and prognosis.

March, 1891. R. M. Fisher, M.D.

INTERMEDIATE.

1. Give a brief history of an acute abscess(inflamation) occuring in the soft tissues.
2. Diagnose an unilateral and a bilateral dislocation of the Inferior Maxilla.
3. Mention the cardinal points, seratim, to be observed in order to procure primary union of a wound.
4. Define shock.
5. Define surgical and natural Naemostosis.

FINAL.

1. An incised wound extending from the alae of the nose, outward and downward, dividing stena's Duct and Facial artery. Treat the case for the first day.
2. Treat an un-united fracture.
3. Diagnose and treat chronic abscess of the Antrum.
4. With what might a cystic tumor of subaccous character, situated beneath the tongue, be confounded? Give treatment.
5. Define carcinomatous and sarcomatous tumors. Give example of each.
6. How do you account for caries occuring more frequently in the upper jaw than in the lower. Give treatment: local and general.

March 1892. R. M. Fisher, M.D.

INTERMEDIATE.

1. Define a wound and treat a simple incised wound antiseptically.
2. Treat a case of hemorrhage following the extraction of a tooth. Would your treatment be different were there a hemorrhagic diathesis, and if so in what respect?
3. How would you proceed to reduce a fracture of the Inferior Maxilla complicated with fractureing of the body of the bone?
4. Define inflammation. What do you mean by inflammatory products?
5. What are the constitutional symptoms of our acute inflammation?

FINAL.

1. Fracture of the neck of the condyle on one side, complicated with compound fracture of the body of the bone on the opposite side in a line with the mental foramen: What would be the probable displacement and how would you treat it?
2. A cancer situated on the lip or on the mouth: What conditions would influence you to advise non-removal? Under what conditions would you deem an operation advisable?
3. After the removal of a careous lower molar an indurated and somewhat painful swelling appears on the face; Give cause and treatment.
4. In using an elevator for the extraction of a tooth it slips passing through the opposite cheek, dividing stena's duct and the facial artery. What would be your treatment for the first 24 hours?
5. Give differential Ptyolism and Pyorrhea Alveolaris. How would you treat the former?

March 1893. R. M. Fisher, M.D.

INTERMEDIATE.

1. Describe in detail the treatment of a wound on strictly Antiseptic grounds.
2. Give the symptoms local and general of an inflammation occurring in the soft tissues, and in bone and the termination of each.
3. What in general are the characteristic symptoms of a dislocation? What are the predisposing symptoms of a dislocation.
4. What means would you adopt for the arrest of arterial hemorrhage, also venous?
5. What do you mean when you say "a wound is suppurating"?

FINAL.

1. How would you treat a circumscribed inflammatory inflammation:--
   (1) To prevent suppuration?
   (2) After the formation of pus?
2. What precautions would you observe in the extraction of

teeth from a patient having a marked Hemorrhagic Diathesis?

3. Describe the operation of ligating the facial artery upon the inferior maxilla. Name the structures involved in the incision.
4. Give the ordinary treatment of fracture of the inferior maxilla. Give treatment for non-inited fracture.
5. Distinguish between Sarcomatous and carcinomatous tumors.

March 1894. Thos Rowe, M.D., L.D.S.

INTERMEDIATE.

1. Name the five cardinal symptoms of inflammation and explain the cause of these symptoms.
2. Give the different terminations of inflammation stating the difference in products in different tissues.
3. Describe the healing process of an incised wound healing by first intention.
4. How would you treat an incised wound to secure union by first intention?
5. What is a fracture of bone? Explain the different varieties.
6. How would you treat a compound fracture through the body of the inferior maxilla?
7. What are the principal causes of dislocation of the lower jaw? What prevents its return to its normal position? How can it be reduced?
8. What is an ununited fracture, and how should it be treated?
9. In inflammatory conditions what symptoms indicate that acute suppuration has taken place.

FINAL.

1. State the local and general symptoms of diphtheria.
2. What are dentigerous cysts? Explain their origin and give their treatment.
3. Describe those benign fibrous tumors on the gum known as epules, giving the proper treatment.
4. Give the differential diagnosis between chancre on the lip and the ulcerated surface of an epithelioma.
5. What are the symptoms of the necrosis of bone?
6. How long would you treat a necrosed lower jaw? How would you know when to stop treating?
7. Explain the diagnostic difference between benign tumors and malignant.
8. What is a salivary fistula, and how would you treat it?
9. Explain the operation of closing the cleft in a case of simple hare-lip.
10. What is Thrush? What are its characteristics? How should it be treated?

March 1895. R. M. Fisher, M.D.

INTERMEDIATE.

1. (a) Describe the local disturbance in inflammation which

produce Hyperaemia, heat, redness, swelling and pain.

.(b) Under what non-inflammatory may each of these symptoms exist?

2. How do superficial wounds usually heal when throughly cleansed and their surfaces properly coapted?

3. Describe healing by granulation.

4. What do you understand by the Antiseptic treatment of wounds?

5. What are the predisposing causes of dislocation of the inferior maxilla.

6. Dislocation of the inferior maxilla complicated with fracture of the body on the opposite side: How would you proceed to reduce the dislocation?

FINAL.

1. In the production of local anaesthesia what methods are most commonly employed?

(a) In what way would you use cocaine, in order to obtain the best results with the least amount of the drug?

(b) Would you consider it safe or otherwise to produce Chloroform or Ether Narcosis while the patient is under the influence of Cocaine?

2. What are the terminations of Ostitis? Give local treatment of acute Osteo periostitis.

3. Describe briefly the process of repair in simple fracture bone.

4. In opening an abscess on the hard palate the palatine artery is divided and obstinate hemorrhage ensues. What means would you adopt to arrest it.

5. What constitutional disturbances accompany dentition in children? Under what conditions would you advise lancing the gums?

7. What are the lessions occuring in the oral cavity that may be ascribed to syphilitic origin?

1. State the principal symptoms, local & general, of inflam. in soft tissue & in bone and give terminations.
2 How stop excessive venous hemorrhage?
3. Cicatrix - how differ from ordinary integument; what changes does use produce
4 Differentiate between abscess & simple tumor of max. sinus
5. Give treatment of a comp'd fracture of inf. max. complicated with dislocation on opp. side, when all teeth are in place.
6. Causes of necrosis & treatment.
7. Abscess of antrum. Treat
8. Causes of facial neuralgia - symptoms & treat. advisability of removing Meckels ganglion?
9. Dentigerous cysts
10. Distinguish local oral lesions of syphilis - Epithelioma
11 Cancrum Oris.
12 Differentiate - caries. necrosis of bone, causes & symptoms.
13 Tumor? Distinguish malignant & benign & non-malignant.
14 Treat fracture of inf. max. with no teeth in either jaw
15. Varieties of sarcoma - & carcinoma
16. Glossitis Tonsilitis Folliculitis
17. Syphilis - symptoms of each stage